

College of Forestry Safety Manual

**For
Students, Faculty, Staff, and Visitors
College of Forestry
Oregon State University**

**Updated
January 2020**

College of Forestry Safety Manual

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College of Forestry 000: Safety Committee Chair Letter

Safety Policy & Procedure Manual Section 000:

Safety Committee Letter

Effective: January 2020

Revised: January 2020

The College of Forestry is committed to providing a safe environment for our faculty, staff, students, and visitors. We believe safety is a life-long endeavor. The pursuit of safety through education, awareness, and collaboration never ends. Safety begins with the individual and extends to the collective. Each individual must take an active part in seeking and providing safety education, bringing awareness and solutions to safety issues, and collaborate in these efforts.

The College Safety Committee meets regularly and takes the responsibility for establishing and maintaining an effective safety program. However, the responsibility for a safe environment extends across all facets of the College. It is essential that each of you asks yourself does my unit have a safety plan that initiates preventive measures and eliminates hazards associated with your daily activities. Safety plans extend beyond the walls of our buildings to the lands we explore and the roads we travel.

By working together, we can maintain a healthy accident-free environment. It starts with a positive safety attitude backed by knowledge and good habits. A proactive safety approach benefits us all.

Sincerely,



Kathleen Kavanagh
Safety Committee Chair
College of Forestry
Oregon State University

College of Forestry 100: Introduction

Safety Policy & Procedure Manual

Section 100 Introduction

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to define responsibilities and expectations for safe working procedures in all College of Forestry activities within this section a) a Safety Code is established and defined, b) The College safety committee is established, and c) The College of Forestry Safety Program is established as policy.

Background Information

To all members of the College Community;

The College of Forestry is committed to providing a safe environment for our students, faculty, staff, and visitors. Safety is the business and responsibility of every campus citizen and can be better achieved through proper education, training, use of protective equipment, and enforcement of safety rules. The responsibility begins with the individual at all levels from students and workers through supervisors, managers, directors, department heads/service group leaders, and deans to the highest level of University administration. It is essential that each of us takes an active part in initiating preventative measures to control and eliminate hazards associated with activities under your direction.

The Forestry Executive Committee and Safety Committee asks that each member of the College accepts the challenge of maintaining an accident-free and safe environment. It is your proactive safety attitude, your knowledge of safe practices, and your actions that will determine the success of our safety program.

Implementing a systematic approach to workplace safety will require a cultural change in many units, among colleagues, and within the profession. All departments in the College need to nurture a "safety culture." College policy and individual work practice must dictate that safety never take a back seat to other interests. No one should be asked – and no one should tolerate – a potentially disabling or life-threatening risk in the name of cost-cutting, productivity, or any other priority. Safety considerations must be an integral part of the operating policies of every department.

College of Forestry 110: Management Commitment to Safety

Safety Policy & Procedure

Manual Section 100: Introduction

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to define the College of Forestry Safety Code and to assign the responsibilities for the implementation of the Safety Code. In addition, the academic department and service group are defined.

Applicability

All academic and research personnel, students, staff, and visitors in the College of Forestry

Policy

College faculty, staff, students, and visitors who perform any job-related activities in the College of Forestry are required to perform their work activities in compliance with the College Safety Code.

Definitions

An **Academic Department** in the College of Forestry is defined as one of the three major departments: Forest Engineering, Resources and Management, Forest Ecosystems and Society, or Wood Science and Engineering. It includes all administrative staff, students, employees, and faculty (including adjunct, emeritus, courtesy, etc.) who report directly or through their supervisor to the Academic Department Head.

A **Service Group** in the College of Forestry is defined as a collection of those groups or individuals who provide a primary support role to the Academic Departments. This includes the Dean's Office, College Computing Facilities, College Business Office, College Projects and Maintenance, College Forests, College Student Services, College Communications, and others. It includes all administrative staff, students, employees, and faculty (including adjunct, emeritus, courtesy, etc.) who report directly or through their group leader to the College Director of Operations, Executive Associate Dean, or Dean.

It is the responsibility of all Academic Department heads and Service Group leaders to institute and communicate to all employees, students, and visitors, the *College Safety Code*. The Code:

1. Maintains safety as a core value of the College, on the same level and with the same support as other values defined by the Forestry Executive Committee.
2. Recognizes that the Academic Department Head or Service Group Leader is the role model for the unit, and all of his or her actions and decisions add to or detract from the credibility of the safety commitment. Safety should be part of each individual's annual evaluation.
3. Ensures that the Forestry Executive Committee personally sets the standard for safety performance.
4. Recommends that the College annually undergoes an evaluation and discussion of the College's safety performance. Subsequently this evaluation is used to develop an effective system to ensure that existing and evolving hazards are controlled or abated.
5. Safety plans will be prepared by all supervisory units in the College. They will address potential hazards appropriate to the particular unit and will be available to all employees.

Each Academic Department and Service Group is responsible for adopting programs, rules and procedures that promote safety and productivity. In addition, each Academic Department and Service Group shall designate a department or group Safety Coordinator who shall be responsible for coordinating the department's or group's safety programs and representing the Academic Department or Service Group on the College Safety Committee. The College Safety Committee shall assist all Academic Departments and Service Groups in compliance with this order. The College Safety Committee shall:

1. Adopt a written safety code (see above).
2. Publish and update the College Safety Manual and bring awareness to safety standards appropriate to the particular needs of each academic department or service group.
3. Establish a program to promote awareness of safe work practices.

4. Institute and promote training and other educational programs for managers, supervisors, and employees to promote awareness of and competency in safe work practices.
5. Support the University Environmental Health and Safety in conducting regular lab safety inspections/surveys so that potential hazards are detected, corrected and/or controlled in a timely manner.
6. Support the University Environmental Health and Safety in promoting effective investigation and management of accidental loss and workers' compensation claims.
7. Support the University Human Resources in maintaining accurate, comprehensive records relating to injuries, accidents, property damage, and any other incident that has or potentially will expose the state to financial loss. In addition, these records will be kept for a timely period to help in understanding the underlying conditions of accidents and injuries and lead to possible for prevention strategies.

College of Forestry 120: College of Forestry Safety Committee

Safety Policy & Procedure Manual

Section 100: Introduction

Effective: 01 January 2020

Revised: January 2020

Purpose

The purpose of this section is to establish and describe the functions of the College of Forestry Safety Committee.

Policy

The College of Forestry hereby establishes the College of Forestry Safety Committee. The Committee will be composed of at least one representative from each Academic Department, at least one representative from the service groups, and one representative from the College Forests staff. The committee members will be appointed by the respective department or group leaders (i.e., Department Heads, College Director of Operations (for service groups), College Forests Director). The Dean will designate the Chair for this Committee. Terms of service will be two years with options for renewal and a rotation schedule to ensure continuity.

Procedure

The College Safety Committee shall work closely with the Environmental Health and Safety Unit of University Facilities Services and the University Safety Committee.

The current safety committee is identified as:

Katy Kavanagh, (Chair), Associate Dean for Research

Roger Admiral, Building and Facilities; university emergency planning initiative

Joern Dettmer, TallWood Design Institute

Steve Fitzgerald, College Forests safety

Amanda Goddard, FES, biohazards safety

Jim Kiser, FERM; University Safety Committee liaison; forestry field instruction and research safety

Matt Konkler, WSE

Brett Morrisette, FERM, Field Safety

Kathy Motter, FES, chemical lab safety

Art Myers, Facilities and Maintenance

Vanessa Petro, FES

Sean SanRomani, Computing Resources, general office and employee safety

Jeff Wimer, FERM, logging/field safety

College of Forestry 130: College of Forestry Safety Program

Safety Policy & Procedure Manual

Section 100: Introduction

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to establish and describe the College of Forestry Safety Program.

Policy

It is the policy of the College of Forestry to provide a safe environment for all of its employees, students, and visitors. In addition, it is the policy of the College of Forestry to fully comply with the Oregon Administrative Rules - Oregon Occupational Safety and Health Division 437-007-0100.

437-007-0100 Safety and Health Program. Every employer must implement a written safety and health program that establishes management commitment, supervisory responsibilities, accident investigation, employee involvement, hazard identification, training, and annual evaluation of the program.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 5-2003, f. 6/02/03, ef. 12/01/03.

Procedure

It is the purpose of this policy to:

1. Abide by all University, federal, state and local regulations as they pertain to our mission.
2. Apply good sense and safe practices to all jobs.
3. Exercise good judgment in the application of this policy.
4. To further these goals the following assignments of responsibility are made.

Management

1. Establish rules and programs designed to promote safety and make known to all employees the established rules and programs.
2. Provide all supervisors with copies of appropriate rules and regulations.
3. Make available training necessary for employees to perform their tasks safely.

4. Provide protective equipment for employees where required.
5. Impress upon all the responsibility and accountability of each individual to maintain a safe workplace.
6. Record all instances of violations and investigate all accidents.
7. Provide disciplinary action for any employee(s) disregarding this policy.
8. Appoint a College employee with enforcement authority over safety matters.
9. Ensure that safety inspections are conducted of all the College's worksites, maintain records, and continually monitor the safety program for effectiveness.

Supervisors

1. Be completely responsible for on-the-job safety and secure the correction of safety deficiencies.
2. Make sure proper safety materials and protective devices are available and used and all equipment is in safe working order.
3. Instruct employees in safety requirements.
4. Review accidents, supervise correction of unsafe practices, and file accident reports.
5. Conduct jobsite safety meetings and provide employees with proper instruction on safety requirements.
6. Notify Department Heads and Group Leaders of safety violations.

Crew Leaders

1. Carry out safety programs at the work level.
2. Be aware of all safety requirements and safe working practices.
3. Plan all work activities to comply with safe working practices.
4. Instruct new employees and existing employees performing new tasks on safe working practices.
5. Make sure protective equipment is available and used.
6. Make sure work is performed in a safe manner and no unsafe conditions or equipment is present.
7. Correct all hazards, including unsafe acts and conditions which are within the scope of your position.
8. Secure prompt medical attention for any injured employees.
9. Report all injuries and safety violations.

Crew members

1. Work safely in such a manner as to ensure your own safety as well as that of coworkers and others.
2. Request help when unsure about how to perform any task safely.
3. Correct unsafe acts or conditions within the scope of the immediate work.
4. Report any uncorrected unsafe acts or conditions to the appropriate supervisor.
5. Report for work in good mental and physical condition to safely carry out assigned duties.
6. Avail yourself of College sponsored safety programs.
7. Use and maintain all safety devices provided.
8. Maintain and properly use all tools under your control.
9. Follow all safety rules.
10. Provide fellow employees help with safety requirements.

All Personnel

1. Strive to make all operations safe.
2. Maintain mental and physical health conducive to working safely.
3. Keep all work areas clean and free of debris.
4. Assess results of your actions on the entire workplace. Work will not be performed in ways that cause hazards for others.
5. Before leaving work, replace or repair safety precaution signs removed or altered. Unsafe conditions will not be left to imperil others.
6. Abide by the safety rules and regulations of every work area.
7. Work in strict conformance with federal, state and local regulations.

Disciplinary policy:

The College expects that all persons will adhere to safety procedures and policies in our daily work activities. Non-compliance activities shall be brought to the attention of the immediate supervisor and a written action shall be documented that includes remedial efforts of the non-compliance activity.

College of Forestry 140: Changing the Culture about Safety

Safety Policy & Procedure Manual

Section 100: Introduction

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to introduce the concept of culture change and awareness of safety in the workplace.

Background Information

There is a wealth of information available on safety in the workplace and safety programs within the workplace but there are several common themes. First and foremost is that the strength of any company or organization is its people. The second is that the key to success depends on a visible management commitment to safety. The third is communication and reporting. Fourth is the belief that all injuries and fatalities are preventable and that “unsafe is unacceptable.” Finally, it is important that everyone understand that safety begins at home and in our daily lives. The idea is that safety in the workplace is a continuation of safety in our daily practices.

Creating a Culture of Safety

According to industry and agency experts, the key is to maintain effective standards to protect worker health and safety. Standards are voluntary practice guidelines to help workplaces meet regulatory requirements. It has been proposed that workplaces may elect to follow either prescriptive, process-driven standards or performance-based standards.

Prescriptive, process-driven standards provide rules defining specific actions that must be taken in various situations. Performance-based standards are designed to meet performance goals without specifying how they are to be achieved. A small number of companies favor performance-based standards, while the majority prefer prescriptive standards. Scare programs, reminders, incentives, and other magic bullets don’t work.

They might change reporting but they don’t change behavior. The most effective motivations for safety are peer safety culture, management credibility, and an organizational safety system.

Employer and Supervisor Actions for Healthier and Safer Workplaces

Taking responsibility - Ensure that you have an effective worker/employer occupational safety committee to help identify and reduce workplace hazards (for higher risk workplaces).

Meeting standards – Develop and constantly review the health and safety standards that apply to your work and ensure that these standards are fully met.

Getting help – Have contact with a safety association, private consultant or the Occupational Safety & Health Administration ([OSHA](#)) for more information on ensuring your working conditions are as good as they can be.

Training workers - Ensure that all workers are properly trained and supervised by competent personnel to work safely. Young and/or new workers tend to have more workplace injuries, largely due to inadequate training and supervision.

Changing workplace culture - Demonstrate a genuine and ongoing commitment to workplace health and safety at all levels of the organization, starting at the top. Make health and safety an integral part of organizational meetings, hiring, promoting, objectives, publications and reviews.

Employee Actions for Healthier and Safer Workplaces

Everyone has responsibility for workplace health and safety. When it comes to workplace health and safety, workers have the most to gain ... or lose. The action steps below help workers exercise their fundamental rights and responsibilities ...to know, to participate, and to refuse unusually dangerous work.

Getting involved – Employees should be encouraged to assist the College Safety Committee identify and reduce workplace hazards.

Meeting standards - know the health and safety legislated standards that apply to your work and your workplace. Cooperate with your employer and fellow workers in meeting health and safety standards. Support initiatives to exceed these standards where possible.

Getting help - contact the College Safety committee, health and safety web sites, [OSHA](#), or other reliable sources for more information on working conditions. Be mindful of not only shorter-term safety issues, but also longer-term health issues related to the work you do.

Being trained - get the proper training for any job you do so that you can do the tasks without endangering your safety or health - or the health and safety of your fellow workers.

Walking the talk - demonstrate a genuine commitment to health and safety - on and off the job. Make health and safety an integral part of your way of life ... and support others in protecting their health and safety.

College of Forestry 150: Working Group Safety Plan

Safety Policy & Procedure Manual

Section 100: Introduction

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to define the *Working Group* and provide information for creating a safety plan applicable to individual working groups.

Background Information

A written Safety Plan is required for each working group and responsibility for the safety plan falls under the working group leader, supervisor, or a designated safety officer.

Policy

It is the policy of the College of Forestry that each and every working group will have a written safety plan and that all workers in the working group shall read and acknowledge that the safety plan has been reviewed with them by their supervisor or designated safety officer.

Procedure

A Working Group in the College of Forestry is defined as any subset of individuals in an Academic Department or Service Group who have specific jobs, expertise, and goals. These groups report to an individual working group leader who then reports to the Academic Department Head or Service Group Leader. Examples of working group leaders include Principle Investigators (P.I.'s), and persons designated to head specific service groups (i.e., head of student services or facilities services). See Appendix A.

Individual Working Group Safety Plans should be written following templates provided by OSU's Environmental Health and Safety, <https://ehs.oregonstate.edu/manuals> (currently in development). The safety plan should be considered a living document, to be reviewed annually.

The Lab or Working Group Safety Plan will be stored in a readily accessible location for easy access and reference. An electronic copy is to be archived.

College of Forestry 200: Accident Reporting

Safety Policy & Procedure Manual

Section 200: Accident Reporting

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to make standardized information available for the process of reporting accidents. Included in this section are links to the required forms necessary in the event of a work-related accident and a flowchart that details the process for reporting accidents.

Background Information

Most accidents are caused by the failure of people, equipment, materials, or environments to behave or react as expected. Accident investigations are an important part of the College of Forestry's and University's safety programs through accident prevention.

An important aspect of the entire accident prevention effort is the College's and University's ability to record and track the complete accident experience. This includes not only accidents to employees, but also to students, visitors, and volunteers. The Report of Accident form has been developed to provide the accident-related information in a uniform manner. The information originates at the department level and is then sent to College and University committees and departments that oversee loss control and employee benefit programs, such as the College Safety Committee, the Office of Human Resources (OHR) and Environmental Health and Safety (EH&S). These groups can then direct their efforts and resources to the areas of greatest concern. The College of Forestry accident reporting is intended to conform to the University and OR-OSHA requirements for reporting of all accidents

Applicability

All academic, research, students, and visitors in the College of Forestry.

Procedure

All accidents that occur on the job and result in injury must be investigated and reported in a timely manner. Late reports result in unnecessary fines and delayed or denied claims. Incidents (accidents involving no medical claims or time lost) must be reported on a [Report of Accident form](#). Accidents involving medical claims or time lost must be reported on the [SAIF 801 form](#) (State of Oregon Worker's and Employer's Report of Occupational Injury and Disease) and the [Report of Accident form](#).

These forms must be delivered to OSU Human Resources within 48 hours of the accident or incident.

Supervisor Responsibility in Accident Reporting

Supervisors are responsible for completing and filing the necessary report forms and performing an accident investigation of all injury-related accidents. Accident investigations are to be conducted with prevention in mind and should not be done to place blame.

Accidents Involving Employees or Volunteers

For injuries or accidents occurring to employees or volunteers, the supervisor must discuss the incident with the employee or volunteer and any witnesses before completing the reports. The supervisor must also make any necessary changes in procedures or conditions to prevent similar accidents.

Accidents Involving Students or Visitors

All injuries incurred by students and visitors at the University should be investigated and reported. The responsibility for reporting has been assigned to the instructor or department administrator who was in charge of the area, class, or function during which the student or visitor was injured. The injury is reported on a [Report of Accident form](#) and it is important to include all pertinent information about the accident and the names of any witnesses.

Accident Reporting Procedure

Report of Accident Form

The [Report of Accident form](#) must be completed by the supervisor as soon as possible after the accident. Forms are available from the department office or OHR. The form's purpose is to gather facts on how the accident happened, names of witnesses, and what medical treatment was required. A copy of the completed Report of Accident form must be sent to Human Resources Staff Benefits. If an accident involving an employee eventually requires medical treatment or involves time lost, the original Report of Accident form is sent to OHR along with the [SAIF 801 form](#).

In the event that it is not possible to get the form to OHR within 48 hours, the report can be faxed to 541-737-7771.

The Office of Human Resources is responsible for sending a copy of the Report of Accident and SAIF 801 forms to EH&S who may decide to investigate the accident further. Supervisors should assist EH&S in this investigation because of the lag time associated with the written reports. All serious accidents should also be reported by telephone to EH&S as soon as possible (541-737-1001).

SAIF 801 Form

The SAIF 801 Form must be completed in addition to the Report of Accident form for all on-the-job injuries that cause lost work time and/or require off-campus medical attention. This form is used to claim payment of benefits for an occupational injury or illness.

Forms are available from OHR and completed forms must be filed with OHR within 48 hours of the accident. Questions regarding Workers' Compensation claims, Report of Accident forms, or SAIF 801 forms may be addressed to the Office of Human Resources, at 737-3103.

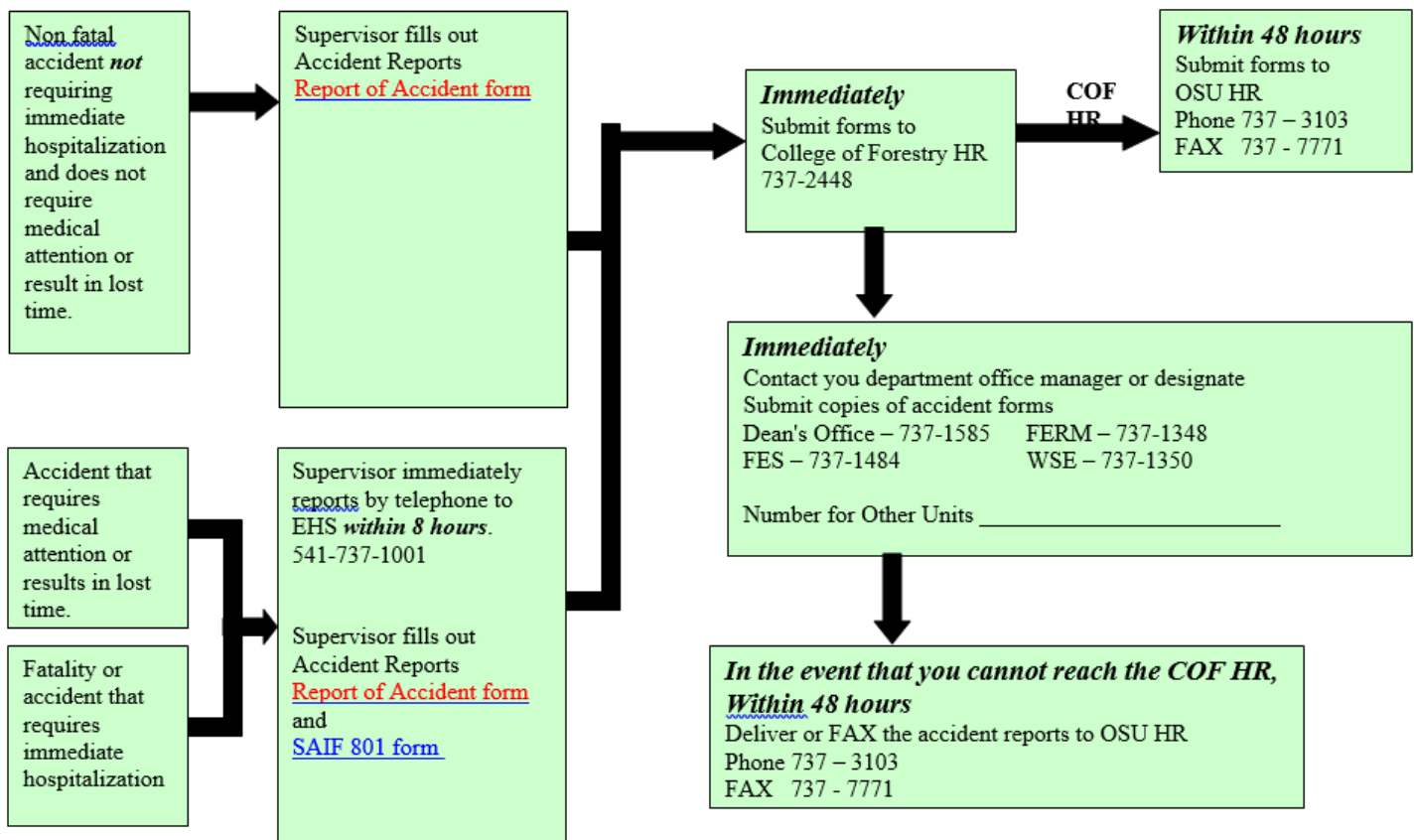
Delivery of Report Forms

It is the responsibility of the supervisor to deliver original copies of the forms to the College of Forestry Office of Human Resources. Copies of the accident report forms are to be delivered to OHR and the department office manager.

Fatality or Other Serious Accident

Any on-the-job accident that results in a fatality or the immediate hospitalization of an employee shall be reported WITHIN 8 HOURS by telephone to Environmental Health and Safety (541-737-1001), who in turn will make the required notification to Oregon Occupational Safety & Health Agency (OROSHA).

Accident Reporting Process



College of Forestry 300: Laboratory Safety

Safety Policy & Procedure Manual

Section 300: Laboratory Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide information to help protect employees and students from the health hazards presented by laboratory chemicals and activities conducted in laboratories.

Background Information

A laboratory is defined as a room or group of rooms under the control of a lab supervisor or principal investigator (PI) where relatively small quantities of hazardous chemicals are used on a non-production basis. Rooms such as computer labs, electronic labs, or reading labs are not considered "laboratories" for the purpose of this manual.

Workers performing in laboratory conditions are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 2.

General

- Laboratory safety is the highest priority during all laboratory activities
- Laboratory Safety is an attitude
- Most accidents are the result of complacency and quite often happen to experienced workers
- Safety is a team effort as well as an individual effort

College of Forestry 310: General Laboratory Safety and Chemical Hygiene Responsibilities Safety Policy & Procedure Manual

Section 300:

Laboratory Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to help provide information on general laboratory safety for employees and students and to establish the duties and responsibilities of the laboratory Chemical Hygiene Officers.

Background Information

A laboratory is defined as a room or group of rooms under the control of a lab supervisor or principal investigator (PI) where relatively small quantities of hazardous chemicals are used on a non-production basis. Rooms such as computer labs, electronic labs, or reading labs are not considered "laboratories" for the purpose of this manual.

NOTE: This chapter of the College of Forestry Safety Manual serves as the College's Chemical Hygiene Plan.

These rules apply to all people working in laboratories in the College of Forestry. This includes graduate and undergraduate students and volunteers. Visitors must comply with all rules.

Applicability

All academic, research, students, and visitors in the College of Forestry.

Policy

It is the policy of the College of Forestry that all faculty, staff, students, and visitors who perform any job-related activities in laboratory conditions are required to follow all rules and regulations with regard to all laboratory activities. In addition, Chemical Safety Officers will be designated as instructed under this section.

Procedure

General Laboratory Safety

1. Safety takes precedence over all other considerations.
2. Every worker must know the location of fire extinguishers, eye wash stations, emergency showers and fire pulls.
3. Every worker must know the meaning of all alarms and the evacuation route.
4. Each laboratory must have a basic first-aid kit and a more comprehensive kit should be in a central location such as the departmental office.
5. Do not work alone while performing dangerous procedures. Be sure there is someone in the immediate vicinity you can reach in case of emergency.
6. Know the location of and how to use eyewash fountains, deluge showers, and fire blankets.
7. Be sure you understand the hazards involved in a procedure and take all necessary safety precautions before beginning.
8. Food products (lunches, snacks, juices, condiments, etc.) are not to be stored in laboratory refrigerators. Consumption of food and beverages or smoking is not permitted in laboratory operation areas. Laboratory glassware will not be used for food preparation or consumption.
9. Heavy items must not be stored on high shelves.
10. Unsafe facilities, equipment, or behavior should be reported to your supervisor.
11. Unattended equipment and reactions are major causes of fire, floods, and explosions. Be sure all utility connections are secure. Anticipate hazards that would result from failure of electrical, water, or gas supply. Use hose clamps on water lines. Be aware that liquid spilled on your floor may be dripping on your downstairs neighbor within minutes.
12. Each laboratory will designate one person as chemical hygiene officer and report the name to the College Safety Committee.

13. Each laboratory will have a paper copy of this manual in an accessible location. Safety rules and instructions specific to work in the lab will be added and the resulting document will be the Laboratory Chemical Hygiene Plan.
14. Each OSU employee working in a laboratory must develop work habits consistent with this Chemical Hygiene Plan to minimize exposure to the chemicals. Laboratory Safety Rules should be understood and followed ([Reference 25](#)).
15. Emergency numbers will be posted near each phone.
16. Plan operations, equipment, and protective measures based on knowledge of the chemicals in use.
17. Use engineering controls (e.g., hoods, centrifuge rotor hoods) appropriately to minimize chemical exposure.
18. Wear appropriate protective equipment as procedures dictate and when necessary to avoid exposure.
19. Each laboratory worker is responsible for maintaining a reasonably clean and uncluttered work space.
20. Lab workers are jointly responsible for common areas of the laboratory.

Chemical Hygiene Responsibilities

A. OSU President

The President of Oregon State University has the ultimate responsibility for chemical hygiene throughout University laboratories, and, with assistance of other program administrators, provides ongoing support for safe use of chemicals at OSU.

B. OSU Chemical Hygiene Officer

The Senior Industrial Hygienist (Environmental Health and Safety) shall serve as the OSU Chemical Hygiene Officer. This individual, or the members of their staff, shall have the responsibility and authority to:

- Work with administrators and other employees to develop and implement appropriate chemical hygiene policies and practices.
- Inspect any OSU facility and investigate any accident involving OSU employees, students, or equipment.
- Temporarily suspend the operations in any OSU laboratory in which the practices represent an imminent health hazard.
- Monitor procurement of chemicals.

- Oversee the performance of regular, formal chemical hygiene inspections and inspections of emergency equipment in all OSU laboratories.
- Assist Lab Supervisors/PIs and Laboratory Chemical Hygiene Officers with developing safety precautions and adequate facilities.
- Maintain current knowledge concerning the legal requirements of regulated substances in the laboratory.
- Review the OSU Chemical Hygiene Plan annually.
- Monitor chemical hygiene training for compliance with code-mandated items.
- Coordinate the chemical waste disposal program.

C. Department Chair or Site Superintendent

1. The Department Chair or Site Superintendent will determine the number of Laboratory Chemical Hygiene Officers needed for their unit and designate those Officers. ***At least one Officer will be required for each unit that has a laboratory operation involving chemicals.***
2. The names of the individuals assigned as Laboratory Chemical Hygiene Officers for their department will be sent to Environmental Health & Safety (EH&S). EH&S should also be notified of any change in these assignments.

D. Laboratory Chemical Hygiene Officer

1. The Laboratory Chemical Hygiene Officer will be knowledgeable of the operations in the laboratory or laboratories)for which they are responsible.
2. The Laboratory Chemical Hygiene Officer will perform the following:
 - Assist the responsible Lab Supervisor/Principal Investigator in the development of a Laboratory Chemical Hygiene Plan for individual laboratories, if needed.
 - Inspect stored chemicals at least annually; inspect laboratory safety
 - Equipment and labeling periodically.
 - Evaluate procedures in each lab and determine those that are hazardous.
 - Determine adequacy of ventilation systems for new chemicals/procedures.
 - Provide information on proper handling of highly toxic chemicals to ordering labs.
 - Provide information on chemical hygiene, as needed.
 - Assist in or conduct chemical hygiene inspections in labs.

E. Lab Supervisor/PI

1. The Laboratory Supervisor or Principal Investigator is the individual who has the primary responsibility for safety in the laboratories under their control.
2. This individual, or delegated members of their staff, shall have the responsibility to:
3. Develop a Laboratory Chemical Hygiene Plan for their laboratory.

4. Inspect their laboratories for unsafe conditions and practices and take appropriate corrective action.
5. Provide the required safety training to the employees and students that work in their laboratories. Document the training provided.
6. Investigate injuries to lab employees or over-exposure events.
7. Evaluate the need for protective equipment or chemical exposure monitoring.
8. Request appropriate monitoring from EH&S if necessary.

F. University Chemical Safety Committee

1. The University Chemical Safety Committee members are appointed by the Vice Provost for Research. The Committee is responsible for reviewing and approving any changes to the OSU Chemical Hygiene Plan.
2. The Chemical Safety Committee may also investigate and discuss reported unsafe practices conducted in any OSU laboratory. Their recommendations for correction, including disciplinary action, are to be sent to the Vice Provost for Research.

Laboratory-Specific Chemical Hygiene Plan (LCHP) Template

Purpose

In accordance with *Oregon Administrative Rule (OAR) 437-002-0360 Toxic and Hazardous Substances* and the OSU CHP, the purpose of this Laboratory-Specific Chemical Hygiene Plan (LCHP) is to provide guidance and protocols for the protection of employees and visitors at Oregon State University (OSU) from the potential health hazards associated with chemicals used in the laboratory.

The College of Forestry uses the [EH&S Chemical Hygiene Template](#), please refer and download it here.

College of Forestry 400: Forest Field Safety

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide information to help protect employees and students from the health hazards presented by field activities conducted in the forest.

Background Information

Workers performing in forest field conditions are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7,

437-007-0001 Authority of Rules. These rules are promulgated under the Director's authority contained in ORS 654.025(2) and ORS 656.726(4).

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 5-2003, f. 6/02/03, ef. 12/01/03.

437-007-0002 Purpose of Rules. The purpose of the rules contained in this Division is to prescribe minimum safety and health requirements for all employees employed in forest activities work.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 5-2003, f. 6/02/03, ef. 12/01/

General

- Field safety is the highest priority during all field activities
- Safety is an attitude
- Most accidents are the result of complacency and quite often happen to experienced workers
- Safety is a team effort as well as an individual effort

Sections covered in this manual include:

Section 410 Personal Protective Equipment

Section 420 Planning, First Aid, and Work Conditions Section

430 Tools, Fire Extinguishers, and Explosives

Section 440 Cutting Trees, Pre-commercial Thinning, and Slash Section

450 Forest Driving

College of Forestry 410: Personal Protective Equipment

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: August 2019

Purpose

The purpose of this section is a) to ensure that all persons involved in forest field activities are properly trained in safe working practices and procedures and b) to ensure that College of Forestry field activities are in compliance with University and OR-OSHA rules and regulations for safety.

Background Information

Forest activities that require the use of personal protective equipment (PPE) are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7, subdivision D (437-007-0300).

The College of Forestry keeps and makes available to all of its employees and students hardhats, Hi-Vis safety vests, foam hearing protection, gloves, and safety goggles as well as field first aid kits through the Peavy Instrument Room. Hardhats are inspected for use by equipment room personnel and replaced after the service life has expired. First aid kits are inspected for perishable items and these are replaced as needed. Employees or students may check out safety equipment during the instrument room posted hours or by contacting the instrument room manager during other times. In addition, safety equipment may be reserved through the web page. The instrument room manager is:

Jim Kiser,
Department of Forest Engineering 541-737-4219
jim.kiser@oregonstate.edu

Applicability

All academic, research, students, and visitors in the College of Forestry.

Policy

College faculty, staff, students, and visitors who perform any job-related activities in field conditions are required to obtain and use personal protection equipment where designated by this section.

Procedure

Personal Protective Equipment Checklist

The PPE requirements for each job activity in the forest may vary and the supervisor should inform each person under their supervision of the minimum PPE requirements for the activity and insure that each person complies with this. The following checklist is a summary of the minimum requirements for forestry field activities.

- ☐ Hard Hat
- ☐ Footwear
- ☐ Hi-Vis Safety Vest
- ☐ Eye Protection (Glasses with shields or goggles)
- ☐ Hearing Protection
- ☐ Hand Protection (gloves)
- ☐ Personal first aid kit

Required Personal Protection Equipment

Hard Hat

A hard hat is required anytime you are outside of the vehicle on forest lands where there is potential for head injury from falling or flying objects. Hard hats must conform to ASTM standards and be Hi-viz in color. **OR-OSHA (437-007-0305 Head Protection)**

NOTE:

The employer is required to provide and require the use of hard hats for employees.

Footwear

Boots should be worn that are appropriate for the field conditions. Boots are defined as work boots with ankle support and non-skid soles. Persons whose duties require them to walk on trees, logs or boomsticks, must wear sharp caulked boots, or the equivalent.

Caulks are recommended when working in and around logs and slash. Caulks are not recommended on rocky ground. Persons who operate chain saws must wear cut resistant foot protection that will protect against contact with running saw chains. **OR-OSHA (437- 007-0330 Foot Protection)**

NOTE:

The employer is not required to provide logging boots for employees. The cost of logging boots may be borne by employees.

Clothing

A hi-viz vest is required around any active equipment, during hunting season, or along travel corridors. **OR-OSHA (437-007-0310 High- Visibility Color)**

A minimum standard of short-sleeved shirt and long pants are required for forestry field activities.

Hearing Protection

Hearing protection is required in areas where the db is > 85. This includes chain saw use. **OR-OSHA (437-007-0335 Hearing Protection)**

Hand Protection

Gloves must be used in any activity that exposes the hands to hazards including rough or sharp surfaces and any type of chemical or thermal use. **OR-OSHA (437-007-0320 Hand Protection)**

NOTE. *The employer must provide and require employees to use hand protection where required:*

Eye Protection

Safety goggles or shields for eyeglasses must be used where eyes are exposed to flying particles. **OR-OSHA (437-007-0315 Eye and Face Protection)**

NOTE: *The employer must provide and require employees to use eye protection where required.*

First Aid Kit

Each person should carry a small personal-sized first aid kit in addition to the larger crew first aid kit. A list of suggested kit supplies can be found at:

https://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/si/first_aid_kits_and_supplies_si006.pdf

In addition to the listed minimum requirements for PPE, special job activities may require the use of additional required PPE including flotation devices where workers are on or near water and respiratory protection where workers are exposed to air contaminant.

College of Forestry 420: Planning, First Aid, and Work Conditions

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to ensure that all persons involved in field activities are properly trained in the identification of workplace hazards and the planning of safe working conditions including proper medical supplies and first aid training.

Background Information

All field activities may be subject to the rules and regulations for planning, first aid and work conditions as regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7, subdivision C (437-007-0200).

Forest activities are divided into those of more than one day duration and those of no more than one day duration. Activities in this section include *Site Planning and Implementation, Hazard Identification, Checking Systems, Working Alone, Medical Services, and Weather Conditions*.

Applicability

All academic, research, students, and visitors in the College of Forestry who are conducting field activities. Procedure

The following checklist for supervisor should be evaluated prior to the start of any new activity. Please reference remote field conditions section which have specific requirements by OSU.

A pre-work onsite safety inspection has occurred

Identified hazards have been identified and marked where necessary

A checking procedure for all workers has been established especially for employees working alone

A medical plan for the site has been established

A weather plan has been established

Field sanitation has been provided for where appropriate

Site Planning and Implementation

Supervisors are responsible for the following regulations in the case of all activities whose duration is longer than one day are subject to the following:

Onsite Surveys

Before the start of any activities an onsite safety survey must be conducted. **OR-OSHA (437-007-0200)**. The purpose of the survey is to identify any safety hazards that may be present on the site. In addition, the employer is required to conduct a pre-work safety meeting with all employees working on the site to discuss the site conditions and identified hazards as well as the medical evacuation procedures for that site.

NOTE: This meeting must be documented and may be used to satisfy the requirement for monthly safety meetings (**OR-OSHA 437-007-0130(4)**).

Prior to the start of any activities, danger trees or snags in the work area must be evaluated by a competent person. If any are deemed as hazards, they must be felled or at a minimum the work must be arranged to minimize danger to workers.

The employer is responsible for arranging activities so that the actions of one worker do not create a hazard for any other workers on the site.

Hazard Identification

Supervisors are responsible for identifying any worksite hazards and insuring they are marked appropriately (**OR-OSHA 437-007-0205**). Hazards are to be marked with hazard identification ribbon that must be bright orange, at least 1 1/2 inches wide, and marked in black with “skull and crossbones” and/or the word “Danger.”

NOTE: The employer must notify employees of existing marked hazards in their work area and instruct all employees in the recognition and use of hazard identification ribbon. This ribbon must not be used for any other purpose than identifying hazards and must be removed when the hazard is abated.

Checking Systems

Supervisors are responsible for implementing a checking system to account for all employees at the end of each work shift. Employees must be knowledgeable about the checking system (**OR-OSHA 437-007-0210**).

NOTE: In the case of employees working alone, the employer is required to implement a system to check on the well being of those workers as provided in the section on *working alone* (**OR-OSHA 437-007-0215(3)**).

The checking system must include the time interval between checks and the procedures to be followed if the employee cannot be contacted, including provisions for emergency medical care and treatment.

- A specific person must be assigned for contacting the lone employee and verifying when contacts were made.
- The time intervals for checking must be understood and agreed to by all parties.
- Intervals should reflect the hazardous nature of the work and the methods available for checking.
- The system for checking an employee’s well-being must be reviewed at least annually.

Working Alone

Workers are not prohibited from working alone when performing certain jobs which by their nature may be single employee assignments, provided the employer complies with the requirements for Checking Systems and Medical Services and First Aid (**OR-OSHA 437-007-0215 (3)**).

NOTE: (OR-OSHA 437-007-0215 Sections 1, 2, and 4).

The employer must not assign workers to a task or location so isolated as to be without visual, audible, or radio contact with another person who can summon or provide aid in an emergency.

When the job tasks include fire, suppression, prescribed fire, tree climbing, power chain saw operation, yarding, loading or a combination of these duties a minimum crew of two employees who must work as a team and must be in visual or natural unassisted voice communication with one another. In addition, when the job tasks include moving heavy parts or there is a probability of something heavy falling on a worker, there must be another person in the area who can render immediate assistance or emergency care.

Medical Services and First Aid

Supervisors are responsible for developing and implementing an emergency medical plan to ensure emergency medical service to employees with major illnesses and injuries (**OR- OSHA 437-007-0220**).

All employees must be knowledgeable concerning the emergency care and emergency medical treatment plan (**Section 2**).

All personnel employed in forest activities must be trained in first aid and CPR as follows (Section 3

1. In a language they understand.
2. At least every 2 years or as required by a nationally recognized first aid training provider.
3. All supervisors must be first aid and CPR trained prior to their initial assignment.
4. All new employees, other than supervisors, that are not first aid and CPR trained prior to their initial assignment must receive a first aid and CPR briefing.
5. For the initial start-up of an operation where new employees are assigned, at least one out of every five crew members must be first aid and CPR trained before work starts.

NOTE: (OR-OSHA 437-007-0215 Section 4).

Each worksite must have at least one serviceable and operable two-way radio, phone or radio/phone or one- or two-way messaging device available to reach ambulance service. Citizens' band radios are permitted only as a secondary means of communication. In the event of a communication “dead area” the crew must have a mobile communication unit or advance plans to relay emergency calls through another site.

NOTE: (OR-OSHA 437-007-0215 Section 6).

At worksites of more than one day duration, the employer must have available near the worksite communication device(s):

- Written land directions to the worksite.
- The worksite location by longitude and latitude.

NOTE: (OR-OSHA 437-007-0215 Section 7).

At work sites of more than one days duration When air evacuation is available, the employer must have available, near the worksite communication device(s), the:

- Name and phone number of the air evacuation service.
- Worksite location by latitude and longitude or township, range and section as required by the air service.

First Aid and Transportation

The employer must assure that transportation is always available to a point where an ambulance can be met, or the nearest suitable medical facility (**OR-OSHA 437-007-0215 Section 8**).

NOTE: (OR-OSHA 437-007-0215 Section 9).

Vehicles used for the transportation of personnel must carry a suitable first aid kit that is easily located. In addition to the vehicle first aid kit, additional first aid kits must be available at the job site. First aid kits must be suitably equipped for the job.

The instrument room carries these and they are available for checkout.

First aid supplies must be stored in adequate containers, clearly marked “First Aid”, and regularly inspected and replenished as needed. The container must not be locked but may be sealed. All employees must be informed of the location of first aid supplies.

Working Near Unstable Objects and Danger Trees

Supervisors are responsible for conducting a general inspection of the worksite to identify trees, logs, rootwads, rocks, chunks or other objects that may roll, slide or fall towards personnel. If any object is likely to move during work activity, it must be removed, stabilized, or the work activities modified so that the unstable objects are no longer a hazard. (**OR-OSHA 437-007-0225**).

NOTE: Consideration must be given to rain, snow, other weather conditions, or working below felled and bucked timber that may increase the likelihood that objects may roll, slide, or fall.

Working Conditions

Supervisors are required to have a competent person who must determine if work activities can be safely conducted during inclement weather conditions or darkness. When weather conditions or darkness pose

a hazard to workers, the activity must be discontinued until the work is arranged to mitigate the hazard.

NOTE: This rule does not prohibit work activities at night, but it requires an assessment of conditions so work can be done safely.

Field Location Information

The following information should be recorded to assist emergency or search crews to reach the work site.

Legal Description

Section _____

Township _____

Range _____

County _____

GPS Location (Lat & Long, Datum used)

Emergency Contacts Include the nearest medical facility

Name _____

Phone _____

Name _____

Phone _____

Medical Facility _____

Phone _____

College of Forestry 430: Tools, Fire Extinguishers, and Explosives

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to ensure that all persons involved in forest field activities are properly trained in the use of hand and portable tools, chain saws, fire extinguishers, and explosives used in any forest activities.

Background Information

The use of hand and portable tools, chain saws, fire extinguishers, and explosives used in any forest activities may be subject to the rules and regulations regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7, subdivision C (437-007-0400). The section on explosives has been deleted from this section. Employees engaged in any work activity that includes the use of explosives should follow the OR-OSHA directives with regard to the use and regulations of explosives (OR-OSHA 437-007-0415).

Applicability

All academic, research, students, and visitors in the College of Forestry. Procedure

The following checklist for supervisor should be evaluated prior to the start of any new activity.

- ☐ All tools have been inspected for safe condition. All wooden handles have been inspected.
- ☐ All tools have been stored in vehicles properly.
- ☐ All employees using chain saws have been through a training course. Required fire extinguishers are available and have been inspected.

Hand and Portable Power-Driven Tools

Supervisors are responsible for the safe condition of hand and portable power tools used in forest activities regardless of tool ownership. The supervisor must insure that all safety devices and controls must be in place and function properly. In addition, the supervisor must require all personnel to:

1. Inspect each tool before use to assure its safe condition
2. Report any unsafe tool condition
3. Remove or repair tools if the condition affects the safe operation

NOTE: If a slick or slippery axe or hammer handle cannot be firmly gripped, the tool must not be used.

All tools must be appropriate for their use and used in a safe manner. Wooden handles must be sound, straight-grained and tight-fitting.

Heads of shock or impact-driven and driving tools must be dressed or ground to remove any mushrooming.

When the heads of shock or impact-driven tools show a tendency to chip, they must be removed from service.

Cutting edges of tools must be sharp and properly shaped.

When tools are not being used, they must be stored in a location where they will not create a hazard.

Racks, boxes, holsters, barriers or equivalent means must be provided and used so the passengers and/or driver will not be endangered by tools, equipment or materials being transported, loaded or removed.

Chain Saws

The College of Forestry provides training in the safe use of chain saws. If you or your employees have not received this or equivalent formal training in the use of chain saws, you should not use them. Chain saw training can be arranged through the College Safety committee.

Operation of chain saws is regulated through OR-OSHA 437-007-0405

All chain saws must be inspected prior to use for cracked handles, loose bars, or other defective parts.

Fueling for chain saws must be away from open flames and never with the engine running.

Chain saws must have an operable chain brake and an automatic throttle.

Chain saws must always be started on the ground or some position with firm footing.

Never start a chain saw in the air.

You should never use a saw:

- To cut directly overhead in a manner that would cause limbs, chunks of bark or pieces of wood to fall on the operator.
- At a distance that would require them to relinquish a safe grip on the saw.
- In a position or at a distance that could cause you to become off balance, or have insecure footing.

When carrying a chain saw beyond a short distance, the engine should be off while walking and the chain brake engaged.

Fire Extinguishers

Fire extinguishers, where required are regulated through OR-OSHA 437-007-0410.

Fire extinguishers in use must be fully charged and maintained in operable condition.

They must be visually inspected monthly in addition to having an annual maintenance check. The annual maintenance check date must be recorded and this record must be retained for one year.

Training for use of Fire Extinguishers is provided through the university at <https://ehs.oregonstate.edu/osu-fire-extinguisher-use>

Explosives and Blasting Agents

1. The storage, transportation, handling, and use of explosives and blasting agents must be in accordance with OAR Chapter 437, Division 3, Subdivision U, Blasting and The Use of Explosives.
2. Explosives and blasting agents must be handled only by qualified, designated personnel.
3. Explosives and blasting agents must not be transported in:
 - a. The driver's compartment.
 - b. Any passenger-occupied area of a machine or vehicle.
4. Explosives must not be hauled on any vehicle while it is engaged in transporting workers.

EXCEPTION: This rule does not prohibit the driver and one qualified person from riding in a vehicle in which explosives are being hauled

College of Forestry 440: Cutting Trees, Pre-commercial Thinning, and Slash

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to ensure that all persons involved in forest field activities that involve cutting or felling of commercial trees, pre-commercial thinning, or cutting brush and slash are properly trained in the field procedures for these activities.

Background Information

Forest activities that require the felling of commercial-sized trees, pre-commercial thinning and slash cutting regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7, subdivision I (437-007-0800).

Applicability

All academic, research, students, and visitors in the College of Forestry.

Policy

The policy of the College of Forestry is that no personnel under any circumstances are to fell any tree greater than 6" DBH unless they have been through a recognized training course and have been certified to fell trees. Projects that require felling trees greater than 6" DBH are to contact the College Safety Committee for available personnel who are trained and certified to fell trees. Personnel trained and certified to fell trees are to follow all rules in the section on *Logging Safety* in this manual.

Procedure

The following regulations are for those activities involving trees less than 6" DBH, bucking downed logs, or cutting slash.

Any worker falling a tree or bucking a log must be located so their work will not endanger others.

Personnel must not approach within two tree lengths of a tree being felled without receiving a signal from the person falling the tree that it is safe to approach.

The minimum distance between any worker(s) manually falling trees and any other personnel must be twice the height of the trees being felled.

EXCEPTION: This does not apply to a team of two or more working on the same tree.

NOTE:

All College personnel using chain saws or other tools are to be properly trained. Employees who are inexperienced in log bucking are to be directly supervised by a qualified person during any bucking activities. Supervisors are not to ask employees to use chainsaws for bucking logs if they are uncomfortable or feel unsafe in the activity.

Bucking Logs

Activities involving bucking logs (includes cutting disks off of downed logs) are regulated through OR-OSHA 437-007-0820.

When a worker is bucking, they must give a timely warning to others within range of any log that may move after being cut off. If unsure you should not proceed. In the case of windfalls only qualified persons are to buck windfalls.

Before workers start bucking, they must always examine the log to determine which way logs will roll, drop or swing and notify all others in the area before proceeding.

NOTE:

Never buck a log on the downhill side.

Before a worker starts to buck a tree or log they must:

- Clear away brush and other material which might interfere with a quick escape.
- Establish firm footing.

Logs that are not completely bucked through must be conspicuously marked with hazard identification ribbon as required by OR-OSHA 437-007-0205, sections (1) through (5).

Two or more persons must not buck the same tree or log at the same time.

The employer must provide and require employees to use applicable personal protection equipment where required.

College of Forestry 450: Forest Driving

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to ensure that all persons involved in field activities are properly trained in safe driving practices on forest and other unimproved roads.

Background Information

Driving on forest roads presents a host of safety issues not normally found on paved public roads. Most forest roads in both the national forests and industrial lands are single lane roads, with occasional turnouts and surfaced with rock and gravel. These roads were all originally designed and constructed to be logging roads and are commonly steeper and windier than public highways, and probably most important, they were designed and constructed to be single lane roads. In addition, most roads are gated with special vandal- resistance gates that have their own hazards associated with them.

Procedure

General Driving Practices

When driving on forest roads, you will normally see only one set of wheel tracks in the road. This means that if someone is coming towards you, they are driving in the same set of tracks! There are some practices that make this situation safer.

Drive at a speed where you can stop in $\frac{1}{2}$ the distance that you can see down the road. That way, when you meet someone who just came out from around a blind corner, you can each stop before hitting the other vehicle. For most forest roads under good conditions the maximum safe speed is 15-20 MPH.

Stay to the right side of the road around blind corners. Usually the sharp blind corners have wide spots for the outside lane to use. Make it your regular practice to swing wide around these corners in case someone is coming the other way. These roads were built for limited traffic volumes. Today there are far more vehicles driving around in remote parts of the forest.

Pay attention to the road as far ahead as you can. Often you can see part of the road where you will be next, even when you can't see around the next corner. Sometimes it is even in sight out your side window. Notice if there are any vehicles there that you will be meeting soon. A good practice on dry days is to look ahead for dust indicating another vehicle coming.

A number of other safe practices include:

- When driving on forest roads you should always have headlights on to help others see your vehicle approaching.
- All passengers as well as the driver must wear seat belts whenever the vehicle is moving. This is also state law.
- Every vehicle should have a first aid kit and all persons in the vehicle should know where the first aid kit is located.
- On forest roads, trucks, lowboys, graders, and emergency vehicles have the right-of-way. Whenever you need to move over to the right you should remember to stay out of the ditches and be especially careful of soft shoulders which are typical on forest roads.

Forest Vehicles

Know your vehicle well. In many cases you will be driving a vehicle that is different from your personal vehicle. It may be larger in size and/or engine power and likely have 4 wheel-drive. If it does have 4 wheel-drive, make sure you know how to engage and disengage it before you need to use it. Some vehicles are automatic and require nothing more than a simple button push from the cab while others are fully manual and require you to manually lock the wheel hubs from the outside. If you are alone and need to do this, turn off the engine and put the vehicle in park before getting out to lock the hubs.

Public Use of Forest Roads

On state and federal lands in particular, the roads and forests are used by the public sometimes in large numbers. A good practice when encountering others hiking or biking on the roads is to assume that they may have dogs with them. You should be alert to the possibility that a pet dog may be nearby in the brush or across the road running loose. When encountering bicyclists remember they do not have as many options for moving over on loose gravel. Be courteous as well as safe and slow down. Horseback riders pose an additional safety concern. Horses by nature are prone to panic at the slightest occurrence. This poses a danger for the rider and it is best to stop and allow the horse and rider to pass unless the rider motions for you to pass.

Active Forest Operations

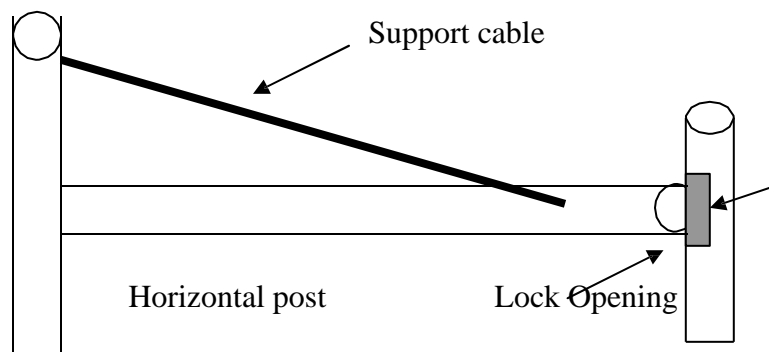
If you are visiting or come upon an active forest operation you should always consider the following.

- Stay well away (300 feet or more) from equipment until the operator acknowledges your presence, stops the machine, and motions for you to proceed forward.
- If you come across steel cables on the ground across the road do not drive over them until you have been instructed to. Many of these are “live” lines and could move at any moment.

- Be aware that the road surface around active operations may be quite soft and disturbed. Drive carefully around these.

Forest Gates

Forest roads are generally controlled by steel post gates similar to the one shown. The gates have a locking mechanism inside the opening in the small post and in some cases will have multiple locks in a configuration that allows the gate to be opened by unlocking any one of the locks present. It is important that before opening one of these you carefully note the configuration and are able to replace it the same way. Failure to do this could result in becoming locked behind the gate.



The lock opening in the small post is a favorite place for wasps and hornets to build nests. In addition, vandals have been known to place broken glass and other objects inside these openings. ***NEVER place your hands inside to open a lock without first looking inside.***

The cable that attaches the horizontal post is a support cable. You should always pay attention to its condition. Vandals have been known to cut or damage this support cable. ***NEVER pull a gate open toward you. Always push it away.*** If the horizontal post were to fall off the hinge it will land on the ground and not on you.

When you are on forest roads remember that you are generally on someone else's lands. The general rule is to leave gates as you find them. If gates are open when you arrive, leave them open. If they are locked you should lock them after you pass through. A good habit to get into is to leave a note in the lock box indicating to others that you are somewhere on the roads inside the gates. A better option is to place a metal tag out on the gate lock that has your name and phone number on it. This indicates to others that you are still inside the area.

College of Forestry 460: Remote Site Safety

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

To ensure that employees are prepared to safely conduct remote fieldwork, are accounted for, and have reasonable access to assistance in the event of an emergency.

Background Information

Fieldwork is fundamental to the University's mission. By its very nature, fieldwork has the potential to expose employees to hazards that are uncommon to their day-to-day lives. Fieldwork is not exclusive to any particular discipline and may be viewed as commonplace in agriculture, engineering, fisheries and wildlife, forestry, and geology, among others. And while extremely remote sites, such as Antarctica, certainly command an elevated level of respect and attention to detail, it is "routine" fieldwork that most often leads to injury, illness, or other unintended consequences. OSHA's General Duty Clause requires that employees are provided "a place of employment ... free from recognized hazards ... likely to cause death or serious physical harm ... about which the employer knew or should have known".

Procedure

More information on remote site work is offered on the following EH&S sites:

<https://ehs.oregonstate.edu/sites/ehs.oregonstate.edu/files/pdf/remotefieldworksafetyguide.pdf>

<https://ehs.oregonstate.edu/fieldwork-safety>

College of Forestry 470: Safe Fieldwork Strategies for At-Risk Individuals

Safety Policy & Procedure Manual

Section 400: Forest Field Safety

Effective: 01 January 2007

Revised: February 2023

Purpose

To ensure that all persons involved in forest field activities are properly trained in safe fieldwork strategies for at-risk individuals.

Background

Certain populations face increased risk when conducting fieldwork especially if they are entering unfamiliar communities and ecosystems. **Supervisors** will identify and adhere to practices to minimize risk for these individuals while conducting fieldwork. The best practices will be discussed with members of the field crew and included in the field safety plan. The plan will detail potential risks and identify ways to address the risks. There are many resources that outline strategies for researchers, supervisors, and institutions to minimize threats to at-risk populations while conducting field work. It is the duty of the supervisor to self-educate on the conditions at field sites and identify issues that might impact the safety of field crew members. Here are several resources designed to help you create a safe work environment for a diverse scientific community:

- Research Paper ‘Safe fieldwork strategies for at-risk individuals, their supervisors and institutions’: <https://urgeoscience.org/wp-content/uploads/sites/33/2021/03/Safe-Fieldwork-Strategies-for-At-Risk-Individuals.pdf>
- Seminar Recording ‘Safer Science: Strategies to protect at-risk researchers when conducting fieldwork’: https://vod.video.cornell.edu/media/Safer%20Science%3A%20Strategies%20to%20protect%20at-risk%20researchers%20when%20conducting%20fieldwork/1_noix4lnn
- UC Riverside Training ‘Fieldwork Toolkit Leadership Training Series’: <https://training.ucr.edu/fieldworkleadership>
- Field Safe at Oregon State University: <https://osufieldsafe.weebly.com/>
- Research Article ‘A guide for developing a field research safety manual that explicitly considers risks for marginalized identities in the sciences’: [Rudzki et al. 2022 Guide for developing a field safety manual considering risks of marginalized identities.pdf](https://doi.org/10.1002/9781118524412.ch10)
- Research Article ‘Best practices for LGBTQ+ inclusion during ecological fieldwork: Considering safety, cis/heteronormativity and structural barriers’: [https://besjournals.onlinelibrary.wiley.com/](https://besjournals.onlinelibrary.wiley.com/doi/10.1111/1365-3113.12111)

Applicability

All academic, research, students, and visitors in the College of Forestry who are conducting field activities.

College of Forestry 500: Office and General Safety

Safety Policy & Procedure Manual

Section 500: Office and General Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide information to help protect employees and students from the health hazards presented by office and general building environments. We want everybody to return home after each shift in as good, or better, health than they started the shift. THIS IS A TEAM EFFORT!

Background Information

OR-OSHA does not currently provide specific guidelines or requirements for administrative and classroom environments. However, the College is intent on providing a safe and orderly working and learning place for all employees and students. To this end, each employee has an obligation to their co-workers, to students and to themselves to be aware of potential hazards, and then to prevent, remove or report hazards and unsafe conditions.

OSU Environmental Health and Safety is responsible for assisting the College with maintaining a safe and healthy campus environment. They provide training, consultation and various safety services, and work to ensure that OSU abides by relevant local, state, and federal regulations. All employees should review their website and read the trainings, New Employee Orientation and Office and General Safety at <https://ehs.oregonstate.edu/training-materials>

General

- Safety is the highest priority during all work related activities
- Safety is an attitude
- Most accidents are the result of complacency; often happening to experienced workers
- Safety is a team effort as well as an individual effort
- If something doesn't feel right, stop and evaluate the task/ ask somebody for clarification or help with the situation

Precautions

The following hazards and remedies may seem like common sense, but a moment's distraction or leaving a potential problem for someone else to resolve can quickly result in an accident and injury.

Pathways, stairwells, and doors must be clear of obstacles. Unexpected obstacles become trip hazards, and could impede emergency exiting of the building.

- Pick-up items left on the floor.
- Store boxes and materials in proper shelving/closets/storerooms.
- Place items for custodial or surplus removal out of the way.
- Report damaged flooring or carpeting.
- Clean up beverage spills immediately.
- Know your emergency exit routes; post plan near doorways.

Electrical and wiring problems can cause shocks, fires, and trips. If accessible, know where the breaker panel for your work area is. Turning off a breaker may be better than trying to unplug a malfunctioning electrical item.

- Use power strips for multiple connections, but do not overload electrical capacity.
- Do not chain together power strips.
- Do not use extension cords for permanent power.
- Secure wires and cords away from walkways.
- Use only UL listed electrical equipment.
- Maintain the grounding pin on all plugs.
- Match plugs and outlets – buildings have a variety of voltage configurations in use.
- Seek assistance from more knowledgeable persons if you do not have the electrical configuration to meet your needs. Please do not reconfigure electrical outlets.

Portable electrical equipment can cause fires, burns, and other injuries.

- Space heaters are not recommended, but if used they must contain tip-over protection, be utilized away from flammable materials, and have adequate amperage at the outlet.
- Fans must have proper cage guards around blades, and should be properly balanced on stands or the floor.
- Coffee makers and toasters should only be used in kitchen type areas and must have

appropriate safety switches for the heating elements

Furniture is to be used and positioned in ways that avoid trips, falls, strains, and pinches.

- Close drawers and cabinet doors when not in use.
- Don't open more than one drawer at a time on file cabinets.
- Use handles when opening and closing drawers.
- Don't place heavy equipment/boxes on unstable desks, chairs or tables.
- Desk, chair and equipment should be ergonomically compatible with the user. EH&S can assist employees with ergonomic analysis. <https://ehs.oregonstate.edu/ergonomic>

Handling heavy boxes and equipment can cause back injuries and falls.

- Lift by bending and using the legs, not bending over with the back.
- Avoid carrying items that block your vision.
- Do not try picking up more than you can safely handle.
- Use stepladders or stepstools for overhead reaching.

Office supplies, copier toner, cleaners or glues may contain chemicals that are irritants/poisons if swallowed, breathed or spilled on skin.

- Read labels or material safety data sheets for items being used in your office and be aware of any appropriate safety precautions or response procedures for accidental exposure.
- Follow the proper instructions for installing toner cartridges in copiers, and properly dispose of waste cartridges.

Sharp instruments can cause cuts or puncture wounds.

- Store paper cutters with blades in down position.
- Only use utility knives or razors with blade guards.
- Remove staples with a staple remover.
- Put away scissors after use and carry with blades aimed downward.

Spilled blood and certain bodily fluids are automatically considered infectious and require proper clean-up and handling. Vomit is not considered infectious and requires no special handling. In general, spilled bodily fluids means paramedics will likely be on site, and the same applies for large amounts of blood.

- Employees should not directly touch the blood of others.
- Minor (small scratch or cut) amounts of blood and absorbent material can be disposed of by the bleeder in a toilet, sink or plastic waste bag.
- Blood on hard surfaces must be sanitized with bleach or other EPA approved disinfectant. Since neither these materials nor disposable gloves are generally available, the custodial team should be contacted at (541) 737-2157.

First Response

First aid kits should be available in department/unit offices. These are intended for minor injuries that do not require additional medical assistance. Employees with more serious injuries should be taken to a medical provider, or 911 should be called for assistance. The extent of injury should determine the appropriate course of action.

AEDs (automated external defibrillator) are located in each department office. AEDs are used to stabilize somebody suffering a heart attack until paramedics can arrive. Numerous employees have been trained in CPR and the use of AEDs, and they should take the lead on this assistance if needed. Instruct somebody to call 911 to give emergency response the nature of the emergency and location and report back in the event that an AED needs to be used.

Department office locations with AED and first aid kits:

WSE 1st floor knuckle, Richardson 119

FES 3rd floor knuckle Richardson 321

FERM 2nd floor Snell, Room 210

Additional College of Forestry AED locations:

Research Forest Office, Peavy Arboretum

Take the time to locate AED and first aid kits in the areas you will be working.

MAKE SURE SOMEBODY CALLS 911 AND REPORTS BACK TO THE SCENE IF AN AED IS USED!

Other Concerns

There are a number of potential human, natural or accidental actions that could disrupt the normal routines on campus. These include fire, bomb threats, crime, severe weather, loss of power, and active shooters. The Office of Emergency Management is tasked with identifying such risks and providing guidance for appropriate responses. More about how to respond to specific emergencies is available here. <https://emergency.oregonstate.edu/>

College of Forestry 600: Workshops and Shop Tools

Safety Policy & Procedure Manual

Section 600: Workshops and Shop Tools

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide students, staff, and faculty the information needed for safe work in a workshop environment, using both stationary machines and handheld power tools. This is not meant to be a comprehensive treatment of the proper techniques to use any machine or tool; rather, it is meant to bring attention to the fundamentals of safety for a workshop environment. Refer to individual operation manuals or other approved instruction for details on how to safely and effectively use a specific machine or tool.

Regulatory Authority

Workshops within the College of Forestry fall under operational guidance of the OSU Environmental Health and Safety (EH&S) department, as well as the Occupational Health and Safety (OSHA) guidelines at both a federal and state level (Oregon OSHA.) The information contained in this document is intended to supplement those guidelines, and in no cases should it be interpreted as superseding existing regulations or guidelines. If you are aware of any instance or situation where COF guidance or practice, pertaining to workshop or other operations, is in contradiction to the above regulatory guidance, you should bring that to the attention of your instructor or supervisor immediately.

General

Personal Protective Equipment (PPE)

1. **Eye Protection:** Eye protection must be worn when using power tools or machines. Even activities that seem low-risk, such as using a random orbit sander, can fling particles into your eye and cause irritation or damage. In addition to tool and machine use, mixing and applying finishes also pose a threat to your eyes. In short, while in a workshop environment, wear eye protection when performing any task. Situations that don't require eye protection would be limited to taking notes in a lecture when no machines are in use, or drawing plans at a workbench. Ensure that the eye protection you choose fits your face, and is suited to the operation you are performing. In many cases, a full face shield is advised or required. If you are in doubt at all as to what kind of eye protection you should wear, or whether your eye protection fits properly, bring it to the attention of your supervisor or instructor. Normal eyeglasses are NOT sufficient for use as eye protection; only if they are specially designed and approved (Z.87+ or equivalent certification) can they serve as eye protection.
2. **Hearing Protection:** Hearing loss is a very real danger when using shop machines or power tools. Hearing loss is cumulative and typically irreversible, which makes it that much more important to adhere to good practices even for short periods of use. Some machines or shop areas will be clearly marked with a "Hearing Protection Required" sign; in these cases it is not optional but mandatory to use hearing protection. In many cases, however, it is either up to your supervisor, instructor, or your own judgment, whether you should use hearing protection. When in doubt, opt to use it. As with eye protection, ensure that the method that you choose (e.g., in-ear or over-the-ear) is suitable for the environment and activity you will be doing. Both methods can be combined for extremely loud environments. In all cases in which you are working with hearing protection, be especially aware of your environment so that you can see what others are doing, and whether someone or something (a siren, for instance) is trying to get your attention.
3. **Footwear:** In most shop situations, enclosed-toe shoes are sufficient protection. Sandals and flip-flops are NOT suitable for shop work, nor are any shoes that do not provide for you to work with a solid, stable stance, such as high heels or some types of cowboy boots. In environments or activities in which heavy objects will be manipulated, steel-toe or safety boots/shoes may be required. In these cases you will be clearly notified and provided the opportunity to obtain that footwear before doing such work.
4. **Outer garments (jackets, aprons, gloves, etc.):** Many shop users find an apron to be an efficient way to keep needed tools and supplies at hand, as well as provide a light protective layer for clothing. When choosing and using a shop apron, ensure that any pockets will securely hold their intended contents against unintentionally falling out in use. Additionally, ensure that any fastening straps are at the side or back of the apron, so there are no loose ends to become entangled in machinery – this can easily and quickly lead to serious injury. In most cases, jackets or gloves are not recommended in a shop environment. Either can lead to entanglement, or to a false sense of protection against dangerous parts. A common exception to the above is when handling rough materials, when machines are not in use. In that case, injury by pinching or splinters is more likely, and can be prevented with gloves and long sleeves / jacket.

General Shop Safety

1. A thorough preparation and an attitude towards safety will mitigate a great deal of the risk that is inherent in working with machinery and power tools. COF policy is that no students or staff will use workshops without having attended a hands-on safety training for each shop. This hands-on training may only be scheduled following the completion of online training, including the quiz that accompanies that training. **Neither the online training, quiz, nor initial hands-on training are intended, nor capable, of making anyone an “expert” user of any shop equipment.** They are intended to provide a consistent framework to convey the fundamentals of shop safety, and safe machine use.
2. Workshops should be kept clean and uncluttered – especially the common work areas that require adequate clearance between machines and other users for safe use. Some workshops have areas that are clearly marked for specific uses, groups, or other special requirements such as PPE or special training. Ensure you adhere to those instructions, in order to avoid injury to yourself, and/or disruption to other shop users.
3. Unless specifically authorized by your instructor or supervisor, the use of headphones while working in a shop is prohibited. You must coordinate any use of headphones, or playing music over speakers, with your supervisor or instructor, and in no case are headphones allowed when using cutting tools or machines. In all cases, you must be working in a location and orientation that allows you to see if someone enters the shop, or is trying to get your attention.
4. Machines should have factory-supplied or -installed safety guards in place, unless a specific task cannot be performed with the guard in place. In those situations, you must check with your supervisor or instructor to confirm that any alternative provides the necessary safety for use of that machine or tool. Blades should be sharp and clean, and properly aligned – both before you begin work, and after you have completed work. Work surfaces should be clean and smooth to allow for machining of materials without having to exert undue pressure on the workpiece. Poorly maintained blades or machines are not only inefficient, but also pose a safety hazard as the level of effort expended by the user increases. If it seems like any operation is being hindered by dull blades or a poor machine surface, stop work and bring it to the attention of your instructor or supervisor, who will either perform the work necessary, arrange for it to be done by others as appropriate, or instruct you in the task(s) needed to get the process running smoothly again. **In no circumstance is it appropriate to just finish your task in those situations, and leave the deficiency for someone else to discover and remedy.** There are no “maintenance-free” machines or processes; upkeep of workshop spaces, machines, and tools is a shared responsibility, and routine maintenance and/or cleaning is always more cost-effective and time-efficient than putting off such work until the problems are obviously detrimental.
5. COF workshops exist to support educational and research outcomes. They are not an appropriate venue for social time, meals, or personal projects. Classes and work sessions

can be enjoyable, and you are encouraged to enjoy them in a way that keeps shop safety and effectiveness at the forefront. You owe it to yourself and other workshop users to maintain a professional and attentive attitude, and enable others to do the same, while in the shop – whether learning or actively working.

First Aid

1. First Aid Kits
 - a. First Aid kits are to be installed and clearly labeled in all workshops. All users should familiarize themselves with the location and contents of the First Aid kit before it is needed.

Fire Safety

1. Prevention
 - a. Preventing fires is always critically important, but gains even more importance in a shop environment where there are frequently flammable solvents, finishes, and – in the case of woodworking shops – combustible dust and solid materials on hand.
 - b. Workshops must adhere to safe practices with respect to

Woodworking Shop Machines

1. Table Saws
 - a. Overview: The table saw is often regarded as the centerpiece of a woodworking shop, and for good reason. It is used to rip wide boards or manufactured panels to narrower widths, as well as cross-cut with a high degree of accuracy and repeatability. Rip cuts are **always** made with one straight edge of the workpiece kept firmly against the rip fence. Cross-cuts are **never** made with the workpiece held against the fence. In either case, any workpiece that is cut on the table saw should be flat, smooth, and dry, so that neither the table nor the blade is damaged, and the workpiece doesn't rock or shift on its way through the cutting operation. The blade can be tilted up to a 45 degree angle, making angled joinery possible. In addition, slots in the table top allow the use of miter gauges and a myriad other fixtures and jigs that permit compound angle cutting and many other specialty machining processes. In addition to cutting, table saws are often fitted with special blades, or sets of blades, to produce grooves or dados – known as non-through cutting operations.
 - b. Specific Safety Considerations: There are two primary dangers associated with table saws. The most obvious is making contact with the blade – either while in operation, or slowing down or even simply protruding from the table surface. The carbide teeth on modern saw blades are extremely sharp and it is not uncommon for users to get cut simply handling them without due care. The second danger is known as “kickback” and is caused when a workpiece, having passed the front of the blade where the teeth are pushing

down into the table, moves away from the fence and into the teeth at the rear of the blade, which can lift the workpiece and propel it back at the user with devastating force. Modern table saws have been equipped with a blade guard mounted to a “splitter” that is the same width as the blade, and mounted close behind it, to keep the cut piece and waste piece edges both away from their respective side of the blade. More recently, the splitter has been superseded by a curved “riving knife” that raises, lowers, and tilts along with the blade, and is mounted within 1 cm or less of the blade itself, making kickback nearly impossible. Most saws incorporate two riving knives – one that also has mounting attachments for the factory blade guard that prevents accidental contact with the blade, and another low-profile knife that is the same or slightly lower height than the blade, so that it can be used in a non-through cutting operation. The use of a dado cutting blade set or specialty wide blades, such as those used for box joints, preclude the use of either a splitter or riving knife, and are thus more dangerous cutting operations, and are not typically done by students.

- c. Safe Use: As stated earlier, workpieces being cut on the table saw must be kept firmly against the rip fence for ripping operations – cuts that are made *along* the long dimension of the workpiece. This means that the piece must be both pushed forward, and towards the fence (which is almost always to the left of the blade) throughout the cut. In cases where the ripped width is wide enough – about 6”-8” or more – the workpiece can be pushed through by hand, while keeping a safe distance from the blade. Narrower rip cuts require the use of a push stick that enables the user to maintain forward pressure of the workpiece, while keeping the hand at a safe distance from the blade. Sideways pressure against the fence must always be at or before the leading edge of the blade – NEVER past it. Applying pressure towards the fence after the blade can force the waste edge of the workpiece that has already been cut into the side and/or back teeth of the blade, increasing the chance for kickback, or at the very least a poorly cut edge. Also as stated above, cross-cuts must never be made against the fence, rather, the workpiece should be carried through the cutting operation by the use of a miter gauge for narrower workpieces, or a dedicated cross-cut sled for wider boards or panels. In these cases, the fence should be well away from the work, allowing the piece that is cut to move freely away from the blade without getting caught between the fence and the blade. If this happens, that small piece is very likely to experience kickback, ruining the piece and posing an injury threat to the user. A rule of thumb for making any cuts that involve a straight edge held against the fence, is that the edge placed against the fence is at least 12”/30cm long, AND longer than the distance between the fence and the blade.

- d. **Maintenance:** Periodic maintenance is essential to continued safe operation of a table saw. Ensure that the table and fence surfaces are smooth, and do not hinder the movement of the workpiece through the cut. Wax these surfaces regularly, in accordance with the volume of use. Ensure that the blade is sharp and clean; dull and/or resin-coated teeth will cause both poor cut quality, and pose a safety hazard in that the effort needed to push the workpiece through the saw is greatly increased. Since the dulling or contamination of a saw blade happens gradually, ensure that you are familiar with how a clean, sharp blade feels in use, and be mindful of how the saw operation feels compared to that reference. Always unplug the saw when removing or installing a blade.

College of Forestry 610: Power Tools

Safety Policy & Procedure Manual

Section 600: Workshops and Shop Tools

Effective: 01 January 2007

Revised: January 2020

Purpose

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Background Information

Workers performing in shop conditions using power tools are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 2. Most all activities in workshops using power machinery will be covered under sub-section O, Machinery and Machine Guarding.

Safety rules for each piece of equipment being used must be reviewed with the employee by the immediate supervisor or someone designated by the immediate supervisor to provide such training.

Every area that uses hand or power tools shall have a safety plan that includes a section on power and hand tools safety and an acknowledgement that each person using such tools has been adequately trained prior to use.

Procedure

1. Personal Protective Equipment (PPE)

- a. **Eye Protection:** Eye protection must be worn when using power tools or machines. Even activities that seem low-risk, such as using a random orbit sander, can fling particles into your eye and cause irritation or damage. In addition to tool and machine use, mixing and applying finishes also pose a threat to your eyes. In short, while in a workshop environment, wear eye protection when performing any task. Situations that don't require eye protection would be limited to taking notes in a lecture when no machines are in use, or drawing plans at a workbench. Ensure that the eye protection you choose fits your face, and is suited to the operation you are performing. In many cases, a full face shield is advised or required. If you are in doubt at all as to what kind of eye protection you should wear, or whether your eye protection fits properly, bring it to the attention of your supervisor or instructor. Normal eyeglasses are NOT sufficient for use as eye protection; only if they are specially designed and approved (Z.87+ or equivalent certification) can they serve as eye protection.
- b. **Hearing Protection:** Hearing loss is a very real danger when using shop machines or power tools. Hearing loss is cumulative and typically irreversible, which makes it that much more important to adhere to good practices even for short periods of use. Some machines or shop areas will be clearly marked with a "Hearing Protection Required" sign; in these cases it is not optional but mandatory to use hearing protection. In many cases, however, it is either up to your supervisor, instructor, or your own judgment, whether you should use hearing protection. When in doubt, opt to use it. As with eye protection, ensure that the method that you choose (e.g., in-ear or over-the-ear) is suitable for the environment and activity you will be doing. Both methods can be combined for extremely loud environments. In all cases in which you are working with hearing protection, be especially aware of your environment so that you can see what others are doing, and whether someone or something (a siren, for instance) is trying to get your attention.
- c. **Footwear:** In most shop situations, enclosed-toe shoes are sufficient protection. Sandals and flip-flops are NOT suitable for shop work, nor are any shoes that do not provide for you to work with a solid, stable stance, such as high heels or some types of cowboy boots. In environments or activities in which heavy objects will be manipulated, reinforced-toe or safety boots/shoes may be required. In these cases you will be clearly notified and provided the opportunity to obtain that footwear before doing such work.
- d. **Outer garments (jackets, aprons, gloves, etc.):** Many shop users find an apron to be an efficient way to keep needed tools and supplies at hand, as well as provide a light protective layer for clothing. When choosing and using a shop apron, ensure that any pockets will securely hold their intended contents against unintentionally falling out in use. Additionally, ensure that any fastening straps are at the side or back of the apron, so there are no loose ends to become entangled in machinery – this can easily and quickly lead to serious injury. In most cases, jackets or gloves are not recommended in a shop environment. Either can lead to entanglement, or to a false sense of protection against dangerous parts. A common exception to the above is when handling rough materials, when machines are not in use. In that case, injury by pinching or splinters is more likely, and can be prevented with gloves and long sleeves / jacket.

2. General Shop Safety

- a. A thorough preparation and an attitude towards safety will mitigate a great deal of the risk that is inherent in working with machinery and power tools. COF policy is that no students or staff will use workshops without having attended a hands-on safety training for each shop. This hands-on training may only be scheduled following the completion of online training, including the quiz that accompanies that training. **Neither the online training, quiz, nor initial hands-on training are intended, nor capable, of making anyone an “expert” user of any shop equipment.** They are intended to provide a consistent framework to convey the fundamentals of shop safety, and safe machine use.
- b. Workshops should be kept clean and uncluttered – especially the common work areas that require adequate clearance between machines and other users for safe use. Some workshops have areas that are clearly marked for specific uses, groups, or other special requirements such as PPE or special training. Ensure you adhere to those instructions, in order to avoid injury to yourself, and/or disruption to other shop users.
- c. Unless specifically authorized by your instructor or supervisor, the use of headphones while working in a shop is prohibited. You must coordinate any use of headphones, or playing music over speakers, with your supervisor or instructor, and in no case are headphones allowed when using cutting tools or machines. In all cases, you must be working in a location and orientation that allows you to see if someone enters the shop, or is trying to get your attention.
- d. Machines should have factory-supplied or -installed safety guards in place, unless a specific task cannot be performed with the guard in place. In those situations, you must check with your supervisor or instructor to confirm that any alternative provides the necessary safety for use of that machine or tool. Blades should be sharp and clean, and properly aligned – both before you begin work, and after you have completed work. Work surfaces should be clean and smooth to allow for machining of materials without having to exert undue pressure on the workpiece. Poorly maintained blades or machines are not only inefficient, but also pose a safety hazard as the level of effort expended by the user increases. If it seems like any operation is being hindered by dull blades or a poor machine surface, stop work and bring it to the attention of your instructor or supervisor, who will either perform the work necessary, arrange for it to be done by others as appropriate, or instruct you in the task(s) needed to get the process running smoothly again. **In no circumstance is it appropriate to just finish your task in those situations, and leave the deficiency for someone else to discover and remedy.** There are no “maintenance-free” machines or processes; upkeep of workshop spaces, machines, and tools is a shared responsibility, and routine maintenance and/or cleaning is always more cost-effective and time-efficient than putting off such work until the problems are obviously detrimental.
- e. COF workshops exist to support educational and research outcomes. They are not an appropriate venue for social time, meals, or personal projects. Classes and work sessions can be enjoyable, and you are encouraged to enjoy them in a way that keeps shop safety and effectiveness at the forefront. You owe it to yourself and other workshop users to maintain a professional and attentive attitude, and enable others to do the same, while in the shop – whether learning or actively working.

3. First Aid

- a. First Aid Kits

- i. First Aid kits are to be installed and clearly labeled in all workshops. All users should familiarize themselves with the location and contents of the First Aid kit before it is needed. Inform your instructor or supervisor of any items removed from the first aid kit so they can be replaced as necessary.
 - b. Eye Wash Stations
 - i. Eye wash stations are required where employees handle substances that could injure their eyes, or are corrosive. Shop workers should familiarize themselves with the location and operation of the nearest eye wash station, both for their own potential use and to be able to assist someone else in the case of exposure to a hazardous material, since the first 10 seconds after such exposure offer the best treatment window.
- 4. Fire Safety
 - a. Prevention
 - i. Preventing fires is always critically important, but gains even more importance in a shop environment where there are frequently flammable solvents, finishes, and – in the case of woodworking shops – combustible dust and solid materials on hand.
 - ii. Workshops must adhere to safe practices with respect to shop cleanliness and the proper disposal of finishes and materials used in their application.
 - iii. Clean your sawdust and wood chips to a level specified by your instructor or supervisor. Ensure finishes and solvents are stored properly after use, and that rags used in the application of finishes – especially oil-based finishes that cure through oxidization – are properly disposed of.
- 5. Woodworking Shop Machines
 - a. Table Saws
 - i. Overview: The table saw is often regarded as the centerpiece of a woodworking shop, and for good reason. It is used to rip wide boards or manufactured panels to narrower widths, as well as cross-cut with a high degree of accuracy and repeatability. Rip cuts are **always** made with one straight edge of the workpiece kept firmly against the rip fence. Cross-cuts are **never** made with the workpiece held against the fence. **Free-hand cuts must never be attempted on the table saw.** Any workpiece that is cut on the table saw should be flat, smooth, and dry, so that neither the table nor the blade is damaged, and the workpiece doesn't rock or shift on its way through the cutting operation. The blade can be tilted up to a 45 degree angle, making angled joinery possible. In addition, slots in the table top allow the use of miter gauges and a myriad other fixtures and jigs that permit compound angle cutting and many other specialty machining processes. In addition to cutting, table saws are often fitted with special blades, or sets of blades, to produce grooves or dados – known as non-through cutting operations.
 - ii. Specific Safety Considerations: There are two primary dangers associated with table saws. The most obvious is making contact with the blade – either while in operation, or slowing down or even simply protruding from the table surface. The carbide teeth on modern saw blades are extremely sharp and it is not uncommon for users to get cut simply handling them without due care. Some modern table saws – most notably the SawStop brand –

incorporate a flesh-sensing technology that nearly instantaneously stops and lowers the blade in the case of skin contact, greatly diminishing the first danger. However, this technology can also result in blade stoppage in the case of cutting wet lumber or other conductive materials, and can be disabled in order to make those cuts. In a shared shop using a table saw equipped with this technology, it is imperative that it is enabled and verified before general saw use, and that users continue to exercise proper operational procedures and technique, and not get drawn into a false sense of safety because of that technology. The second danger is known as “kickback” and is caused when a workpiece, having passed the front of the blade where the teeth are pushing down into the table, moves away from the fence and into the teeth at the rear of the blade, which can lift the workpiece and propel it back at the user with devastating force. Modern table saws have been equipped with a blade guard mounted to a “splitter” that is the same width as the blade, and mounted close behind it, to keep the cut piece and waste piece edges both away from their respective side of the blade. More recently, the splitter has been superseded by a curved “riving knife” that raises, lowers, and tilts along with the blade, and is mounted within 1 cm or less of the blade itself, making kickback nearly impossible. Most saws incorporate two riving knives – one that also has mounting attachments for the factory blade guard that prevents accidental contact with the blade, and another low-profile knife that is the same or slightly lower height than the blade, so that it can be used in a non-through cutting operation. The use of a dado cutting blade set or specialty wide blades such as those used for box joints preclude the use of either a splitter or riving knife, and are thus more dangerous cutting operations, and are not typically done by students.

- iii. Safe Use: As stated earlier, workpieces being cut on the table saw must be kept firmly against the rip fence for ripping operations – cuts that are made *along* the long dimension of the workpiece. This means that the piece must be both pushed forward, and towards the fence (which is almost always to the left of the blade) throughout the cut. In cases where the ripped width is wide enough – about 6”-8” or more – the workpiece can be pushed through by hand, while keeping a safe distance from the blade. Narrower rip cuts require the use of a push stick that enables the user to maintain forward pressure of the workpiece, while keeping the hand at a safe distance from the blade. Sideways pressure against the fence must always be at or before the leading edge of the blade – NEVER past it. Applying pressure towards the fence after the blade can force the waste edge of the workpiece that has already been cut into the side and/or back teeth of the blade, increasing the chance for kickback, or at the very least a poorly cut edge. Also as stated above, cross-cuts must never be made against the fence, rather, the workpiece should be carried through the cutting operation by the use of a miter gauge for narrower workpieces, or a dedicated cross-cut sled for wider boards or panels. In these cases, the fence should be well away from the work, allowing the piece that is cut to move freely away from the blade without getting caught between the fence and the blade. If this happens, that small piece is very likely to experience kickback, ruining the piece and posing an injury threat to the user and others nearby. A rule of thumb for

making any cuts that involve a straight edge held against the fence, is that the edge placed against the fence is at least 12"/30cm long, AND longer than the distance between the fence and the blade.

- iv. Maintenance: Periodic maintenance is essential to continued safe operation of a table saw. Ensure that the table and fence surfaces are smooth, and do not hinder the movement of the workpiece through the cut. Wax these surfaces regularly, in accordance with the volume of use. Ensure that the blade is sharp and clean; dull and/or resin-coated teeth will cause both poor cut quality, and pose a safety hazard in that the effort needed to push the workpiece through the saw is greatly increased. Since the dulling or contamination of a saw blade happens gradually, ensure that you are familiar with how a clean, sharp blade feels in use, and be mindful of how the saw operation feels compared to that reference. Always unplug the saw when removing or installing a blade.

b. Band Saws

- i. Overview: Bandsaws, with their two parallel wheels turning a thin blade that forces the workpiece onto the saw table, offer a much safer cutting environment than a table saw. In addition, the bandsaw provides the ability to make curved cuts and also permits working free-hand without risk of kickback. Various blade sizes, tooth configurations, and blade materials allow for the cutting of a wide range of materials. When properly set up, a band saw can do tasks from rough cutting large timbers, to repeatedly slicing veneers only a few millimeters thick.
- ii. Specific Safety Considerations: As with the table saw, the primary danger in using a band saw is in making contact with the running blade. In contrast to some table saws, there is no technology currently on the market that can intervene to stop a band saw blade in order to avoid serious injury. So it is **always** on the user to practice safe procedures in order to avoid injury due to blade contact. The second danger in using band saws is having the teeth suddenly grab an unsupported workpiece and slamming it to the table, damaging both the blade (and potentially the guide systems) and also the user's hands as they are caught between the workpiece and the table. Occasionally, bandsaw blades may break from metal fatigue after heavy use, and in some instances the loose blade can cause injury if it exits the saw guides before coming to a stop. In most instances of blade breakage, the blade simply stops in the workpiece without further event.
- iii. Safe Use: First and foremost, ALWAYS be mindful of the blade, and the movement of the workpiece through the cut. Never push the workpiece with your hand in a position where you are moving it directly at the moving blade, unless you are still at least about 50cm / 20" away from the blade. Especially in the case of long rip cuts or resawing, it is possible for the board to have sufficient tension inside (that the cut is now releasing) that the final several inches of the board will suddenly split apart to the end of the board. In these cases, you will go from applying pressure against the resistance of the cut, to having no resistance at all. It is easy to see how this can result in a sudden hand movement directly in the direction of the cut. Pushing the workpiece from a position to the side of the cut line, and/or using a push stick or block, will keep your hand out of the path of the blade in these circumstances. As mentioned above, it is also critical to

have the workpiece supported by solid contact with the table throughout the cut. In the cases where the band saw will be used to cut a workpiece that has no flat reference surfaces yet (milling boards from a small log, for instance) it is imperative that a jig be used that will ride securely on the table, and also securely hold the irregular workpiece so it cannot shift throughout the cutting process. Visualizing how the entire cut will be performed (including what will happen to the two pieces after the cut) will reduce the opportunities for stress or surprises. Similarly when making a complicated curved cut, know the smallest radius that the installed blade is capable of cutting, and don't exceed it. Where there are locations where the blade could bind in a tight curve, make relief cuts first in order to eliminate that possibility. It is NEVER advisable to pull a workpiece back out of a partial cut; the blade could be pulled out of the guides, off the wheels entirely, or stressed in other ways. It is therefore critically important to plan cuts that avoid this possibility entirely.

- iv. Maintenance: As simple as a band saw is in operation, there are MANY aspects of setting up the saw so that the operation is simple and effective. The blade must be installed at the proper location on the wheels, and at the proper tension for each specific blade. The upper and lower guide assemblies, including both the side guides (rollers or guide blocks) as well as the thrust bearings, must be adjusted **for each blade**. Before **each use**. The blade can accumulate buildup on the sides and in the gullets, which can then transfer to the tires and lead to poor tracking. Many problems in the use of a band saw can be traced to a poorly cleaned/adjusted machine. If you are not familiar with how to check and/or correct the setup of a band saw, ask your supervisor or instructor before using the saw. As with other saws, you should be familiar with how a dull blade feels and performs, so you can identify when a blade needs to be replaced. Dull blades require more effort, and often will no longer cut straight without constant adjustment during the cut. It can be both dangerous and result in poor cuts, to continue to use a blade that needs replacing.

c. Miter Saw

- i. Overview: The miter saw is designed to make repetitive cuts at angles both left and right of 90 degrees, and in most modern saws at bevels in one or both directions (a "compound" miter saw). They are typically installed with longer auxiliary fences to one or both sides of the saw, with moveable stops to allow for easily repeatable cuts.
- ii. Specific Safety Considerations: Again, as with the table saw, the primary dangers in the use of this tool are making contact with the blade, and having the blade pinched by the workpiece during the cut, throwing the saw body back at the user in a sudden and often violent action. This can be very much reduced or eliminated through proper preparation for the cut, and/or following proper cutting procedures.
- iii. Safe Use: In order to prevent injury due to blade contact, users must always remain mindful of the cutting area, and keep their free hand (the one not operating the saw switch) at least 8" away from it. The free hand should be used to firmly hold down the work piece throughout the cut. This is especially true in cutting at angles other than 90 degrees, in that the cutting area is effectively widened and thus the safe holding distance is increased.

Making a “dry run” through the intended cut – and even practicing on a scrap board or piece of plywood – can reveal where there are areas to better prepare for the cut. All work should be done with the workpiece held firmly and cleanly against the fence. If the workpiece to be cut is away from the fence at the cut line when the cut is begun, the blade can be pinched as the workpiece moves towards the fence as the cut is completed. This phenomenon (often encountered when cutting rough lumber that does not yet have perfectly straight or flat edges & faces) can be reliably predicted and planned for by evaluating the workpiece before cutting, and planning around the specifics of each workpiece and cut. If in doubt about how to set up for any cut on the miter saw, especially with rough or curved/twisted lumber, as your supervisor or instructor for assistance.

- iv. Maintenance: Ensure the blade runs true, and that the teeth are sharp and clean. Ensure you are using the proper blade for the application at hand; a general-purpose blade will cut more aggressively than a fine finish blade, making quicker work of rough lumber cutting at the expense of the smoothness of the cut edge.

d. Jointer

- i. Overview: The jointer’s primary purpose is in creating a flat reference face on rough lumber, as well as to straighten one edge of boards that already have one (or both) flat face(s) that can be placed against the fence.
- ii. Specific Safety Considerations: The primary danger in using the jointer is in making contact with the moving cutterhead. In some cases, the cutterhead can engage too aggressively with the workpiece and throw it back towards the user; this is more common when taking a deep cut on a severely concave face.
- iii. Safe Use: In order to produce a reference flat face, the workpiece must not be pushed down against the cutterhead while it passes across the machine. Downward and forward pressure are necessary but in varying amounts and locations throughout the operation. In cases of large/long boards, a second set of hands (or an auxiliary work stand) may be necessary to safely conduct the workpiece through the cut. And in most cases, multiple passes are necessary to produce a truly flat face. Several light passes are preferable to only one or two heavier cuts, especially on boards that approach the full width of the cutterhead, or especially hard woods.
- iv. Maintenance: Ensure the cutterhead knives/cutters are clean and sharp, and free of nicks. If you notice any damage to the cutting edges during this inspection, bring it to the attention of your supervisor/instructor. Ensure the tables and fence are clean and smooth and allow for free movement of the workpiece. If the workpiece is difficult to move across the tables or fence, this is usually an indication that it is time to clean and wax these surfaces. Ensure this is done in accordance with the instructions on the wax or other material used for this purpose, and only do this work with the power disconnected from the jointer.

e. Planer

- i. Overview: The planer has only one function, and that is to produce a smooth face at a specified thickness, on the opposite side of a reference face that is placed on the infeed table of the planer. It is imperative that the

- material to be planed have a flat reference face; putting a curved or twisted board through a planer will only result in a thinner curved or twisted board.
- ii. **Specific Safety Considerations:** The planer does its work through a rotating cutterhead that is normally well-contained within the machine. It is obviously the primary danger when using the planer, although the other common injury when using a planer is getting a hand or finger(s) pinched either between the board and the table, when the infeed rollers grab the workpiece, or at the mouth of the planer if the user keeps their hand on the workpiece right up to this opening. (These are called “induction zones” and are frequent causes of painful injuries.)
 - iii. **Safe Use:** When it is properly set up, running boards through a planer is a low-drama event. Ensure the depth of cut to be taken is reasonable considering the width of the workpiece, the power of the planer, and the hardness of the board. Further detail on this can be found in the manual for the planer you will be using. Attempting to take too deep a cut in a single pass can overload the planer motor and require a reset – and will jam the workpiece in the planer. As with the jointer, if the tables become worn, they will drastically increase the friction on the workpiece, which may cause it to stall on its way through the planer and require either pulling on the outfeed end, or in cases where that is not effective, stopping the planer and lowering the table (or raising the cutterhead) in order to free the piece. In those cases, that is a sure sign that it is time for a thorough cleaning and waxing of the tables.
 - iv. **Maintenance:** You should be familiar with how the planer sounds and feels when it is operating with sharp blades and well-conditioned infeed/outfeed beds. The blades (or cutters, if using a planer that has a helix-style cutterhead) will get dull over time, and some materials or processes will dull the cutters more quickly. When this happens, the sound will be the first indication – to sometimes accompanied by lines in the workpiece where the blades or cutters have been nicked. Ensure you follow the procedures in the manual for the planer you’re using when changing cutters/blades. In the case of individual cutters, their multiple faces permit rotating to a fresh, sharp surface until all faces are dull. As mentioned, ensure you keep the infeed and outfeed tables clean and waxed for less load on the motor and a smoother operation. When doing ANY maintenance on the planer, ensure it is disconnected from power, and that there is no way another user can power it up while maintenance is being performed. Ensure chips and sawdust are cleaned out from the interior whenever other maintenance is being performed in those areas.
- f. **Power Sanding Machines (drum/belt/spindle)**
- i. **Overview:** Power sanders are substantial time-savers in the shop. They can be used to sand workpieces to a specified thickness with great precision, smooth straight or curved cuts on edges, and shape items either freehand or through the use of jigs or attachments. Various sandpaper grits can be installed, allowing for either rapid stock removal or a finely finished surface.
 - ii. **Specific Safety Considerations:** There are three main dangers in using a power sander. One is through making direct contact with the moving sandpaper surface, which will produce a painful abrasion injury very

quickly. The second is through having the sandpaper (normally a belt) grab the workpiece unexpectedly, causing it to spin or be thrown off the table in the direction of the moving belt. In this case, injuries can range from cuts from the spinning workpiece edges, crushing injuries as fingers are caught between the workpiece and another stationary object, or you and/or other users being hit by the workpiece as it is thrown off the table. The third is through induction zone injuries; for instance, getting a finger pinched at the infeed of a surfacing drum sander.

- iii. **Safe Use:** The primary principle in using sanders safely is to prepare for how the work will be performed, and observing where there is potential for one or more of the above hazards to be encountered. Using jigs and stops, workpieces can be held more securely and at a safe distance from the moving sandpaper. Keep hands well away from the infeed locations that can lead to induction zone injuries. Ensure you are only removing an appropriate amount of material, at an appropriate feed rate/pressure, for the sandpaper grit and workpiece that you are putting through the sanding procedure. Trying to remove too much, too quickly, can easily and quickly lead to heat build-up that will burn the material and clog the sandpaper; in the case of a drum sander, this can lead to a positive-feedback loop of increased heat until both the workpiece and the sandpaper is ruined – and can even lead to smoking or a fire in extreme cases. Check the sandpaper surface before each use to ensure that there are not already any “hot spots” where worn, resin-clogged sandpaper will more quickly overheat. If possible, put workpieces through the sander at various points (or various heights, in the case of spindle or edge sanders) in order to spread the wear more evenly across the entire surface.
- iv. **Maintenance:** Sandpaper will eventually become worn, or can become clogged with resins and sawdust. Special cleaning tools can remove the clogging materials, prolonging the life of the sandpaper considerably. These tools must be used in strict accordance with the instructions, in order to provide maximum benefit as well as safe use. When cleaning no longer provides benefit, it is necessary to replace the sandpaper. Each machine – drum, spindle, belt, disk – has its own specific method and materials. Ensure you know and follow the specific processes for the machine you are using. If in doubt, ask your instructor or supervisor. Often these machines will be marked with a requirement that the sandpaper be changed only by trained shop personnel.

g. Router Table

- i. **Overview:** A table-mounted router is an extremely versatile machine, allowing a wider variety of edge profiling, joinery, and specialty machining than is possible to list here. Through the use of a precise fence, as well as jigs, hold-downs, and stops, it is possible to create repeatable precision on large numbers of workpieces.
- ii. **Specific Safety Considerations:** The router table does its work through a spinning bit, extended some measure above the surface of the table. As with many machines already discussed, this leads to two primary dangers: making contact with the spinning router bit, or being struck by a workpiece that is unexpectedly grabbed and thrown by the spinning bit. It is also

possible for the spinning bit to come loose from the collet, and be thrown from the router.

- iii. **Safe Use:** It is imperative that any work on the router table take into consideration the location and the direction of rotation of the router bit. In most cases, the exposed cutting portion of the bit is rotating towards the user's right, meaning that the workpiece is moved across the bit from right to left in order to push against the cutter and not with it. In infrequent cases, the proper movement will be left to right; users should always verify that the workpiece is moved against the leading edge of the rotating cutters, so it is pushed back at them and not pulled away. When at all possible, guards and hold-downs should be used, so that the opportunity to make contact with the spinning bit is minimized or eliminated. Ensure bits are securely held in the collet and that you are using the correct motor speed for the bit diameter, if using a variable-speed router. If you are unsure about the correct speed, ask your supervisor or instructor before proceeding.
- iv. **Maintenance:** Ensure the router motor is protected from dust and other debris that could build up in the motor, impairing performance or damaging the motor. Ensure bits are clean and sharp before each use, and that any bearings on the bit spin freely. As with most other machines, ensure the table and fence surfaces are clean and smooth, so that there is minimal effort required to move the workpiece except to counter the force exerted by the spinning bit. Ensure the collet is clean before inserting the bit.

h. **Lathes**

- i. **Overview:** Lathes are a special-purpose tool, and are not used in the normal operation of the woodworking shops outside of specific classroom / lab instruction. **ONLY** use lathes under the instruction and supervision of the instructor(s) or technician(s) assigned to teach these classes, and only after completion of their specified, lathe-specific training.

College of Forestry 620: Hand Tools

Safety Policy & Procedure Manual

Section 600: Workshops and Shop Tools

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide information on proper procedures for the use of hand tools and to help protect employees and students from the health hazards presented by hand tools in the shop environment.

Background Information

Workers performing in shop conditions using hand tools are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 2. Most all activities in workshops using hand tools will be covered under sub-section P, Hand and Portable Power Tools and Other Hand-held Equipment.

Safety rules for each piece of equipment being used must be reviewed with the employee by the immediate supervisor or someone designated by the immediate supervisor to provide such training.

Every area that uses hand or power tools shall have a safety plan that includes a section on power and hand tools safety and an acknowledgement that each person using such tools has been adequately trained prior to use.

General

1. Defective tools shall be removed from service
2. When not in use, tools shall be placed where they will not create a hazard.
3. Flexible cords with damaged insulation or defective parts shall not be used
4. Handles of all tools shall be smooth, without sharp edges or splinters, and shall be firmly attached to the tool. Wooden handles of tools shall be of firm straight grained stock.
5. The heads of all shock tools (hammers, sledges, cold chisels) shall be dressed or ground as they begin to mushroom or crack. When such tools show a tendency to chip they shall be immediately removed from service.
6. The cutting edges of tools shall be maintained in a uniformly sharp condition to eliminate the additional hazard resulting from dull edges.
7. Heavy leather holsters, guards, or equivalent protection shall be used for sharp- edged or sharp-pointed tools carried on the worker's person.
8. Workers who use sharp-edged cutting tools shall use appropriate protective equipment such as gloves, aprons, and leg guards.
9. Hand tools used in explosive or flammable atmospheres shall be of the spark arresting type.

College of Forestry 630: Chemical Handling

Safety Policy & Procedure Manual

Section 600: Workshops and Shop Tools

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide information on proper procedures for the use and handling of chemicals in the workshop environment.

Background Information

Workers performing in shop conditions where hazardous chemicals are stored or in use should refer to the sections of the safety manual on chemical safety. In addition, these areas must have a safety plan in place that includes appropriate knowledge and training in the use of these chemicals. All chemicals shall have appropriate MSDS sheets readily available and posted in a conspicuous location for reference by all workers.

General

1. Do not wash hands in cleaning solvents. Absorption of these liquids through the skin can cause serious illness.
2. Do not handle chemicals of any type unless you are aware of the potential skin and inhalation hazards. Consult the appropriate MSDS.
3. Wear appropriate skin, face, eye, and hand protection when moving or handling bulk chemicals.
4. Always wear chemical resistant gloves, aprons, and complete eye protection when handling corrosive chemicals. If chemicals contact skin, wash with large amounts of water immediately.
5. Do not open chemical containers that have been stored in the sun unless proper care is taken. Many chemicals will build up pressure in the container when exposed to heat.
6. Clean up small chemical spills immediately if you can do it safely; otherwise, notify supervisor.

College of Forestry 700: Student Logging Crew Safety

Safety Policy & Procedure Manual

Section 800: Student Logging Crew Safety

Effective: 01 January 2007

Revised: January 2020

Purpose

The purpose of this section is to provide safety information and work procedures for those employees and students taking part in the College of Forestry Student Logging Crew Program.

Background Information

Workers performing in forest field conditions are regulated under Oregon Administrative Rules Oregon Occupational Safety and Health Division, Division 7. College of Forestry Policy is that all student workers and volunteers shall comply with these procedures and rules.

437-007-0001 Authority of Rules. These rules are promulgated under the Director's authority contained in ORS 654.025(2) and ORS 656.726(4).

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 5-2003, f. 6/02/03, ef. 12/01/03.

437-007-0002 Purpose of Rules. The purpose of the rules contained in this Division is to prescribe minimum safety and health requirements for all employees employed in forest activities work.

Stat. Auth.: ORS 654.025(2) and 656.726(4).

Stats. Implemented: ORS 654.001 through 654.295.

Hist: OR-OSHA Admin. Order 5-2003, f. 6/02/03, ef. 12/01/03.

Appendix A



Oregon State
University

University Policy XX-XXX (assigned by Policy Program)

Responsible Executive: President, Provost, Vice President/Provost level

Responsible Office: Insert Name of the Office

Effective: Date

Last Revised: Date

Policy Title

1. Policy Statement

- 1.1. Provide a clear and concise statement of the University's principles on the issue.

2. Reason for Policy

- 2.1. State a reason or rationale why the policy is needed, such as legal or regulatory requirement, risk mitigation, or general principle the university community must follow.

3. Scope & Audience

- 3.1. As recommended by policy owner in conjunction with the University Policy Program.

4. Definitions

- 4.1. Define key terms used in policy.
- 4.2. **Example term:** Insert definition.

5. Responsibilities & Procedures

5.1. Main Topic 1

- 5.1.1. Summarize all responsibilities of the university parties and offices named in the policy and including top level procedures necessary for compliance with the policy.
- 5.1.2. Example text.

5.2. Main Topic 2

5.2.1. An example of a subsection with sub-levels.

a. Indent to the next level using lowercase letters.

b. Example.

i. Sub-indent further using lowercase roman numerals.

ii. Example.

6. Forms & Tools

6.1. List resources to aid in compliance or indicate “None.”

7. Frequently Asked Questions

7.1. If there are common questions, the policy owner may wish to develop a FAQ list hosted on a website page on their website. The URL link will be referenced here.

7.2. If none exist, indicate “None.” A list can always be developed later and a link added in this section.

8. Related Information

8.1. Link to other policies or information that should be cross referenced.

8.2. Include related university policies, federal and state laws, and links to internal websites with information/guidelines related to the policy.

9. History

9.1. Optional: Original issue date (for existing policy): Month, year.

9.2. Last review date: Month, year.

9.3. Next scheduled review date: Month, year.

10. Website

10.1 University Policy Program will insert website as written out entirely (so it can be cut and pasted) and hyperlinked (so it can be clicked on).

11. Contacts

Department	Phone Number	Website
Office Name, Bold	XXX-XXX-XXXX	http://xxxxxx