University Safety Manual

CHAPTER 1 – *PURPOSE AND SCOPE*

1.1 INTRODUCTION

This manual has been prepared by the Office of University Safety and the University Safety Committee to establish basic procedures and provide general rules for risk management, environmental, health, and safety at the Jacksonville State University (JSU).

The manual is broad in coverage and is not intended to cover every procedure in depth. Each Unit is required to develop additional health and safety regulations applicable to their own specific operations, and to correlate those regulations with this Manual. Assistance in developing such departmental regulations is available from University Safety. Departments should provide internal safety policies/guidelines to University Safety.

The Manual format is comprised of two major sections:

SECTION I - Program Responsibilities & Administration
SECTION II - Policies & Procedures

All employees are required to become familiar with the contents of this Manual and are required to sign an annual statement of understanding. One person in each Unit, School, or Department shall be assigned the responsibility of assuring that every faculty and staff member reviews its contents; and that all future personnel do so shortly after their employment at the University and at least once a year thereafter. This person should also be responsible for posting updated Manual material, informing all departmental personnel of changes as they occur, and maintaining a listing of all annual safety training.

University personnel are encouraged to submit suggestions to the Office of University Safety at any time to improve JSU's Health and Safety Program. Suggestions shall be incorporated into the Safety Program at JSU through this Manual, which shall be update regularly as a living document. Review of the applicability of standards and practices contained herein shall occur at least annually and/or as needed.

JSU is deeply grateful to the University of West Georgia and Auburn University, whose Environmental, Health, and Safety Manuals were used as a guide in the development of this Manual.

1.2 AUTHORIZATION AND PROGRAM ESTABLISHMENT

The requirement for establishing and maintaining standards for risk management and environmental safety is met by compliance with the intent of all appropriate Federal and State legislation relating to the University's Safety Program for the protection of all campus personnel.

The administrative guidelines necessary for the establishment of an effective health and safety program - coupled with regulations as set forth by Federal and State agencies, JSU Policies and the Board of Trustees - provide the scope and structure of the Safety Program at Jacksonville State University.

The Safety Program is founded on the following objectives:

1. Develop and recommend University policy relating to safety matters.
2. Support the campus in implementing various safety and environmental health programs.
3. Provide the President and the President’s Cabinet with information on safety and environmental health activities.

4. Develop and maintain information on safety and environmental health as an educational resource for JSU.
5. Act as a forum for discussing campus hazards and accident reviews

1.3 POLICY STATEMENTS

In the area of safety, it is the policy of the JSU (I 06) to provide a healthful, safe, and secure environment for faculty, staff, students, alumni, guests, and friends. No person shall be required to perform any task under unsafe or hazardous conditions.

The responsibility for the administration of the university safety program is assigned to the University Safety Manager as the *Chief Safety Officer*, who reports to the Senior Vice President, Finance & Administration and CFO. However, the implementation of the safety policy is the responsibility of JSU employees, students, and other individuals associated with the University.

JSU shall endeavor to comply with the intent of all appropriate Federal and State legislation that applies to the University's health and safety program. These acts, along with supporting rules and regulations issued by University Safety, will provide the necessary standards under which the University will conduct its program.

CHAPTER 2 - *PROGRAM RESPONSIBILITIES*

2.1 INTRODUCTION

The ultimate responsibility for establishing and maintaining the Environmental, Health, and Safety program on the JSU campus rests with the University President.

Every individual involved with the University, at any level, has the responsibility to help create a safe campus environment. Specific responsibilities of all faculty and staff are directly proportional to their operational authority.

2.2 VICE-PRESIDENTS, DEANS, DEPARTMENT CHAIRS, DIRECTORS, ADMINISTRATORS

It is the responsibility of all Vice-Presidents, Deans, Department Chairs, Directors and Administrators to maintain healthy and safe working conditions within their jurisdictions, to monitor and exercise control over their assigned areas, and to:

a. Observe and comply with all campus health and safety regulations established by this Manual and to comply with Federal and State environmental and safety laws.

b. Identify facilities and equipment that present a health or safety hazard and to prioritize purchases and improvements that will enhance a safe working environment.

c. Conduct, or have conducted, periodic safety inspection of the department and correct any deficiencies that might exist. Departments having hazardous operations are required to make frequent inspections. A written report will be forwarded to the concerned department after each inspection. Deficiencies that are beyond the scope of the department's capabilities will be handled by University Safety upon request. The department will be kept informed on all aspects of the project.

d. Ensure that all personnel are familiar with departmental safety procedures and policies and verify that these procedures are being carried out.

e. Provide necessary safety equipment and protective devices for each job; and make sure this equipment is stored and maintained in satisfactory condition. University Safety is available for assistance in determining what, if any, protective or safety equipment is required for a particular task.

f. Seek prompt medical treatment for all faculty, staff, students, or visitors that are injured and comply with the reporting procedures established by JSU. If the respective department has a first aid kit, ensure all employees know the location and proper use.

g. Investigate and review all injuries, illnesses, or accidents occurring within the department that may result in any degree of loss or potential loss.

h. Require all faculty and staff members to become familiar with the emergency procedures as established by the University Police Department at JSU.

2.3 SUPERVISORS

All Supervisors are responsible for instructing all personnel under their direction in exercising proper operational procedures and seeing that all facilities and equipment under their jurisdiction are always maintained in safe operating condition.

Supervisors shall:

a. Explain clearly to employees under their supervision all JSU safety regulations that are relevant to specific work duties and enforce compliance with published standards in this Manual.
b. Conduct training sessions for all employees to guarantee safe operation and performance of all equipment.
c. Provide personnel with necessary personal protective equipment (PPE) and safety equipment, devices, and clothing. Demonstrate proper use of PPE prior to operation of equipment or performance of hazardous tasks.
d. Inspect all work areas for hazardous conditions or unsafe practices and initiate prompt corrective action(s) to eliminate causes of potential accidents.
e. Maintain good housekeeping practices in all work areas as specified by JSU through the University Safety Committee.
f. Report all unsafe conditions, equipment, unnecessary accumulation of hazardous wastes and work practices observed by yourself or workers on campus to the Department or University Safety within 24 hours. Encourage employees to watch for and report such incidents immediately.
g. Investigate all accidents promptly and complete all necessary forms to fully record such incidents.
h. Submit and encourage recommendations from employees to the Department for improving the safety and efficiency of the Department.
i. Commend and recognize employees who maintain a safe environment and accident-free work record, or who develop unique safety devices or practices for their work area.
j. Report any hazardous substance spill immediately to University Safety. University Safety personnel are available to assist with compliance of any applicable law or regulation.

2.4 FACULTY AND TEACHING ASSISTANTS

Each faculty member and teaching assistant is responsible for disseminating information regarding safety to all students and employees under their academic jurisdiction. Faculty and teaching assistants shall:

1. Explain to students all campus safety regulations and procedures that are pertinent to their specific academic tasks and/or activities.

2. Ensure the proper use of equipment and apparatus by demonstrating the correct operation, providing initial training and instruction, and maintaining periodic surveillance of individual users. Facility and teaching assistants should document and retain this training information.

3. Equip students with adequate personal protective devices and clothing appropriate to the level of risk. Make sure that this equipment is in good repair.

4. Inspect instructional areas frequently for identification of unsafe practices and conditions; and remediate hazards. Advice and assistance are available from the Office of University Safety.

5. Seek prompt medical treatment for all injured students and employees.

2.5 EMPLOYEES AND STUDENTS

All University employees and students are subject to departmental procedures and the campus health and safety regulations established in the Safety Manual, which shall take precedence over any conflicting instructions except where lawful and applicable government regulations may be contrary to these rules.

Students and employees shall:

1. Not perform any function or operation that is considered hazardous, before requesting advice or consulting with their Supervisor or Instructor. Health and safety problems not settled at the supervisory, instructor or department level may be appealed, following established University grievance procedures.

2. Understand and comply with all University and departmental safety instructions, whether written or oral, when performing assigned duties.

3. Use only tools and equipment approved or provided by the Supervisor or Instructor.

4. Always use appropriate safety equipment and guards, and work within established safety procedures, giving precedence to correct methods over expediency or shortcuts.

5. Report all unsafe conditions, practices, or equipment to the Supervisor or Instructor.

6. Report all injuries or accidents immediately to the Supervisor or Instructor. Assist injured persons in obtaining prompt medical treatment when necessary.

2.6 OFF-CAMPUS OPERATIONS

University operations and organizations located off the main campus are required to follow the same health and safety responsibilities as on-campus departments. In addition, satellite groups will develop, publish, and implement specialized safety instructions, as necessary for their particular activities and needs after consultation with the University Safety Office.

CHAPTER 3 – *PROGRAM ADMINISTRATION*

3.1 INTRODUCTION

The Office of University Safety coordinates the overall administration of the health and safety program at Jacksonville State University. University Safety is the primary campus resource for technical and administrative procedures needed to coordinate the health and safety program objectives.

The role of the Office of University Safety includes five salient features:

1. Surveillance;
2. Consultation;
3. Compliance;
4. Education;
5. Program Management

The University Safety Manager is the *Chief Safety Officer* and has the University President's authority to plan, establish and manage priorities for the implementation of program objectives. This office reports directly to the Senior Vice President, Finance & Administration and CFO.

3.2 UNIVERSITY SAFETY

The Office of University Safety is responsible for planning, implementing and administering the University's environmental health & safety program, and for providing supportive technical consultation, training, investigation, and inspection to assure compliance with the health and safety Program established by JSU Policy I 06 and the regulations contained in this Manual. The Office of University Safety also formulates and adopts appropriate new policies and procedures based on analysis and interpretation of pertinent state and federal health and safety laws.

A primary administrative function of University Safety is to assist University Deans, Department Chairs, and Administrators in meeting their assigned health and safety responsibilities outlined in Section I, Chapter 2 of this Manual. To accomplish this, University Safety works with all campus administrators, academic departments, and specialized committees to provide technical and administrative policy and program direction in the programs designed to prevent and reduce accidents and to identify and eliminate environmental hazards and conditions.

University Safety has the authority to request that Deans, Department Chairs, Administrators, Supervisors and other individuals cease or abate unsafe practices or conditions when, in the professional opinion of the University Safety Manager, the condition or operation constitutes an imminent hazard to life and/or property. Other practices that violate published standards, but do not constitute an immediate hazard, will be recommended for correction through appropriate channels.

Administrative duties of the Office of University Safety shall include, but not be limited to, the following program areas:

1. Environmental inspections. Promote safe and sanitary conditions of all campus buildings and grounds by conducting periodic health and safety inspections of all campus facilities. Investigate complaints to identify unsafe conditions, practices and procedures, violations of campus regulations and/or applicable state and federal laws. Report the results of inspections to the responsible Dean, Department Chair or Administrator for correction.

2. Liaison with governmental agencies. Develop and maintain good working relationships with governmental agencies over matters affecting the health and safety of University employees, students, and visitors.

3. Procurement of machinery and equipment. Assist departments in the design, purchase, and use of hazardous or potentially hazardous equipment. Verify that all such items are in conformance with safe operating standards.

4. Review of research projects. Assist in the review of academic research proposals and contracts to certify that pertinent health and safety factors are incorporated in grants and projects submitted by and/or awarded to University personnel or departments.

5. Emergency preparedness. Assist in the development and implementation of University emergency procedures and the procurement of needed equipment. Provide technical consultation to campus emergency personnel.

6. Campus public events. Monitor all campus public events to guarantee proper consideration is given to environmental health and safety factors.

7. Machinery guarding. Ensure that campus machinery, equipment and powered tools are properly guarded in conformance with the standards contained in this Manual.

8. Electrical safety. Make sure that all electrical hazards are identified and eliminated.

9. Fire protection. Inspect, or effect inspections of University buildings, facilities, fire detection and fire suppression equipment at regular intervals. Monitor the use of flammable liquids and materials.

10. Industrial hygiene. Monitor exposures to corrosive or toxic materials, fumes, gases, dusts, and biological or infectious agents in labs, shops, or other campus areas.

11. Fetal risk Monitor the risks from job duties and potential exposures to hazards that may cause harm to fetuses.

12. Ventilation control. Verify laboratory fume hoods and general room ventilation meet accepted flow rate standards.

13. Waste disposal. Provide for the safe handling, storage, and disposal of hazardous and toxic liquid and solid waste. Maintain surveillance of waste disposal and investigate and evaluate complaints regarding general refuse collection and sewage for all campus buildings and areas.

14. Environmental sanitation. Make sure that maintenance of the campus environment is consistent with accepted standards of sanitation for buildings and grounds, water supply and distribution, and swimming pool and athletic facilities.

15. Food sanitation. Ensure that campus food services are operated and maintained in compliance with the University's Food Sanitation Policies.

16. Animal control. Monitor the University community for exposure to unsafe and potentially infectious animals, and effect controls if necessary.

17. Vector control and pesticide use. Direct the safe use, storage, and handling of pesticides. Monitor the adequate control of insects and rodents to prevent or eliminate campus infestation.

18. Personal protective equipment. Assist in the availability and correct use of personal protective equipment for all employees and students on campus.

19. Safety training. Provide for and promote education and training of campus personnel in health and safety practices.

20. Building construction and space modification. Identify asbestos-containing building materials, lead-based paint, and other potential regulated contaminants prior to construction, demolition, and renovation projects. Provide advice on applicable safety codes and practices in such projects. Review construction plans of Capital Planning & Facilities.

21. Services for disabled persons. Provide advice and assistance on health and safety matters relating to the needs of impaired persons on campus.

22. Accident and injury investigations. Conduct appropriate investigation of campus accidents reported to University Safety that may involve University liability under Alabama's tort claims rules. Obtain the necessary photographs, evidence, and witness interviews, when necessary or directed. Remediate the causes of all accidents when feasible

23. Accident statistics. Compile and analyze all University accident and injury statistics and cost data (when available). Prepare and distribute periodic reports to Administrators and appropriate committees.

24. Asbestos Program. Verify University compliance with Federal and State regulations regarding asbestos. Inspect condition of known asbestos-containing materials on campus and operate maintenance permit program.

3.3 UNIVERSITY SAFETY COMMITTEE

The University Safety Committee administers controls or advises specialized activities. The University Safety Manager, or his/her designee, will serve as the chair of this committee; and shall receive copies of any scheduled meeting minutes. Department heads appoint or approve individuals to the University Safety Committee.

The University Safety Committee shall convene at least quarterly.

The University Safety Committee shall:

1. Develop and recommend University policy relating to safety matters.
2. Support the campus in implementing various safety and environmental health programs.
3. Provide the President with information on safety and environmental health activities.
4. Develop and maintain information on safety and environmental health as an institutional resource.

5. Act as a forum for discussing campus hazards and accident reviews.

3.4 DEPARTMENTAL COMMITTEES

Campus and department committees often discuss safety, environmental, and liability issues. The Office of University Safety is available for information and advice to these committees.

Inter- or intradepartmental committees on campus shall:

1. Evaluate the safety of individuals, as well as the liability to the University, before implementing any new policy or procedure.
2. Forward copies of minutes and agendas of meetings that deal with safety, environmental, or liability issues to the Office of University Safety.

CHAPTER 4 – *PROGRAM PROCEDURES*

4.1 PRIORITIES FOR ACCIDENT PREVENTION

Adherence to proper health and safety procedures and standards has been proven to reduce injuries, property damage, and work interruptions. Placing continual emphasis on the procedures and standards published in this manual can eliminate major causes of accidents.

In view of the many demands made on limited University resources, it is necessary to establish an order of priority for the abatement of hazards and violations identified by safety inspections conducted by either a department or the office of University Safety. Serious violations and hazards should always be given top priority and be corrected immediately, or consideration should be given to stopping operations affected by the violation(s) or hazard(s).

"A serious violation shall be deemed to exist in a place of employment if there is a substantial probability that death or serious physical harm could result from a condition which exists, or from one or more practices, means, methods, operations, or processes which have been adopted or are in use, in such places of employment..."
(Occupational Safety and Health Act, 1972, Section 17K)

4.2 HAZARD CLASSIFICATION

The following table identifies the hazard classifications used for establishing priorities for abatement of health and safety hazards:

ORDER OF PRIORITY OCCURANCE	PROBABILITY OF INJURY OR ILLNESS	SEVERITY OF INJURY OR ILLNESS
1	Imminent danger situation	Immediate & serious or fatal
2	High chance of injury or illness	Serious or fatal
3	Moderate chance of injury or illness	Minor
4	Minimal chance of injury or illness	First aid case

To eliminate accidents in high hazard areas, it is mandatory that each department thoroughly familiarize all employees and students under their direction with the hazards that exist. Each department shall also ensure that they fully understand how to safely perform their jobs and how to eliminate or avoid hazards. When hazards and potential accident-causing situations are identified and understood, action should be accomplished in this order:

1. Eliminating the task or providing for a substitute action that can be done without the hazard, or,

2. Isolating the process or operation, or,

3. Providing guards to eliminate or minimize the hazard, or,

4. Reducing the exposure to the hazard, or,

5. Providing personal protective equipment and enforcing its proper use.

4.3 HEALTH AND SAFETY INSPECTIONS

In order to reduce unsafe campus conditions that expose employees, students, and visitors to potentially hazardous operations or areas, an effective health and safety inspection system is essential. All University management personnel have the responsibility to conduct, or have conducted, at least annually, health and safety inspections of the areas over which they have control. Such safety inspections may be of the informal type; however, a written record shall be maintained.

In addition, all teaching faculty, technicians, assistants, and supervisors should make daily "spot" inspection tours of their work and study areas. University Safety will provide any person making a safety inspection with assistance to the extent requested.

University Safety personnel make scheduled and random inspections of all University facilities, machinery, operations, and functions on a continuous basis. If the inspected facilities belong to a specific department, a report outlining the findings and recommended corrections will be sent directly to that specific department. However, in areas that are public in nature, such as hallways, the correction will be handled by University Safety directly. All facilities and/or equipment found to be unsafe for use, as determined by University Safety personnel, shall be removed from further use, and rendered inoperable.

Identification and correction of hazardous conditions should first be carried out in those areas having the greatest potential for serious accidents occurring. The following are the major factors to be considered when planning what campus equipment and facilities to inspect:

1. Areas having equipment or conditions that can contribute to serious accidents.

2. Number of accidents and/or injuries caused by specific equipment areas.

3. Employee and student complaints of hazardous conditions or equipment.

4. Number of University employees, students, or visitors who use such areas or equipment

4.4 HEALTH AND SAFETY AUDITS

To be estashlished

4.5 INJURY RECORD KEEPING & STATISTICS PUBLICATIONS

To be estashlished

4.6 EMPLOYEE HEALTH REQUIREMENTS

To be estashlished

4.7 REPORTING HEALTH AND SAFETY SUGGESTIONS

Employees and students having suggestions regarding health and safety matters should report their recommendations to their supervisor, instructor, or department head in writing. Supervisors, instructors, or department heads should seriously encourage and consider all safety suggestions and respond to them as soon as possible. Guidance or assistance in handling safety suggestions is available from University Safety. Supervisors shall not discharge, nor in any manner discriminate against, any employee because the employee has:

- Filed any complaint or suggestion related to an unsafe situation;
- Testified or is about to testify in any proceeding related to safety at JSU; or
- Exercised on their own behalf or on behalf of others any right afforded federal or state law.

Any employee who believes that they have been discriminated against in violation of section of this chapter of the JSU Comprehensive Safety Manual may, within 30 days after such violation occurs, lodge a complaint with the Department of Human Resources alleging such violation. The Director of Human Resources shall then cause appropriate investigation to be made. If, as a result of such investigation, the Director determines that the provisions of this section have been violated disciplinary action shall be taken against the individual who violation the protection afforded by this section and the employee who suffered discrimination shall be recompensed, including rehiring or reinstatement of the employee to his former position with back pay.

4.8 ACCIDENT INVESTIGATION

Injuries, illnesses, and incidents, other than traffic-related-accidents (which should be reported to the Jacksonville State University Police Department or appropriate local law enforcement agency) that occur on University property or affect our personnel or equipment must be reported to the Office of the Senior Vice President, Finance and Administration and CFO, using Form 60 (see below), who will provide a copy to the Chief Safety Officer. This is the responsibility of the Unit Head.

JACKSONVILLE STATE UNIVERSITY
ACCIDENT REPORT
(For use by employees, students, and visitors)

Name of Injured:_____ Telephone #:_____

Address:_____
Street City State Zip

Job title (if employee):_____ Department:_____

Date of accident/injury:_____ Time of accident/injury:_____

Date reported:_____ Person to whom accident/injury was reported:_____

Where did the accident, injury or exposure occur?_____

How did the accident/injury occur?

List any tools, equipment, substances, machinery, etc. the individual as using when the event occurred._____

Describe the nature and severity of the injury (cut, burn, sprain, etc.)._____

Did the injury/accident involve exposure to blood borne pathogens (bodily fluids)? ☐ Yes ☐ No

Was the injury/accident witnessed? ☐ Yes ☐ No If yes, name(s) address(es), phone number(s) of witness(es):

Did the injured receive medical treatment? ☐ Yes ☐ No When?

If yes, provide the name, address and phone number of the hospital or physician treating the individual._____

Was the individual transported to: ☐ Physician ☐ Hospital by ☐ Ambulance ☐ Self ☐ Another Person

If transported by another person or ambulance, give name, address and phone number of individual or list ambulance service.

Was an Incident Report filed with Campus Police? ☐ Yes ☐ No

Has employee returned to work? ☐ Yes ☐ No If no, anticipated date of return:_____

Name of person completing this form (please print) Signature:

Title: Date:

Distribution: Original to Human Resources
Keep a copy for your records

Rev: 5/1/2008

CHAPTER 5 – *SAFETY TRAINING*

5.1 INTRODUCTION

An effective accident prevention program is based on achieving and maintaining correct job performance. When people are trained to do their jobs properly, they will accomplish tasks safely. Safety training develops the desire, the knowledge, and the actions necessary to prevent accidents. Experience has proven that persons who have learned to recognize and correct unsafe conditions and practices measurably improve their chances of averting the pain, inconvenience, and economic loss due to accidental injury. It is important, therefore, that all University departments, supervisors, and instructors: 1) know how to train employees and students in the safe and proper way of doing their assigned jobs, and; 2) know how to supervise employees and students.

Although training and education cannot be separated completely, safety education is broader in scope and covers subjects not normally included in a regular training program. This chapter deals only with safety training and is concerned with the goal of educating employees so that they are made aware of, and instructed to follow, the standards and procedures established by this Manual. Students in academic pursuits also should receive necessary safety training in the areas of their chosen careers.

Training is a primary way of influencing human behavior. A well-planned training program not only trains employees, but also helps to change other environmental factors and influences so that they will complement the effect of training.

No department, supervisor or instructor shall assume that a newly hired, newly assigned, or reassigned employee or student thoroughly knows all the safe procedures relative to his/her new job. The employee must always be trained in appropriate safety procedures.

5.2 DEPARTMENT TRAINING RESPONSIBILITIES

Every University department or operating unit is responsible for providing specific safety training to its employees. Each employee must be given sufficient instruction with respect to the job assignment that enables them to understand the task(s) to be performed and the predictable hazards that are to be avoided. General safety training is defined as that which is necessary for employees to be able to work safely in the total University environment; and is provided to departments on request by University Safety. Specific safety training is that training which is necessary to safely perform a special job. Both kinds of training are necessary if accidents are to be avoided. Departments are responsible for full participation by their employees in required training programs.

5.3 TRAINING THE NEW EMPLOYEE

All new employees or students must be made aware of all immediate safety work considerations during their first day of employment. Also, specific safety and health policies and standards of this Manual pertaining to their work assignment are to be personally reviewed by employees and/or students before being allowed to begin work in a new job assignment. To determine on-going training needs, supervisors should observe employees frequently to see that short cuts or violations are not occurring.

General safety meetings or training sessions should be conducted a minimum of twice a year, or more often in hazardous environments, to assure that safe practices and procedures are being followed.

5.4 UNIVERSITY SAFETY TRAINING RESPONSIBILITIES

University Safety is responsible for providing generalized safety-training programs and for assisting departments in their specialized safety training programs, as requested.

Departments or any operating unit may obtain the following assistance from University Safety in developing a program of training, orientation, or information for their employees:

1. General safety training classes of approximately 30 minutes to 2 hours each may be provided for a variety of safety related subjects. Films, lectures, demonstrations, and group discussions may be utilized as training aids in these classes.

2. Special assistance is provided for the avoidance of specific health and safety hazards unique to particular jobs or departments. Consultation meetings between the involved department and University Safety may be requested. These department programs may be an elaborate series of training sessions or just a brief talk.

CHAPTER 6 – *EMERGENCY PREPAREDNESS*

6.1 INTRODUCTION

It is the responsibility of all University administrators, department chairs, supervisors, and faculty, to be aware of and to follow the emergency procedures established in this chapter and the university-wide emergency plans administered by the University Police Department. It is also their responsibility to ensure that all employees and students under their direction know and comply with these procedures. In order to minimize injuries and property damage, it is the intention of the University that these published emergency procedures and plans be followed in all critical situations.

The primary system for handling any kind of on-campus emergency is to telephone the University Police Department at 256-782-5050.

University Police personnel are available 24 hours a day, 7 days per week and are prepared to respond to emergencies events on campus. For non-emergency situations call 256-782-8888. The University Safety Manager or designee is on duty or on call 24 hours a day. During normal business hours, they can be reached at 256-782-8599; after normal business hours, contact the University Police Department for their assistance in contacting the appropriate safety/maintenance person on call.

6.2 REPORTING EMERGENCIES

The quickest and easiest way to obtain professional help for any type of emergency is to call The University Police Department at 256-782-5050. Prepare to give your name, JSU ID number, location, and the nature of the problem. For medical emergencies, if you are trained in first aid, offer as much assistance as necessary and stay with the victim until emergency responders arrive. See section 6.11 at the end of this chapter for specific numbers.

1. When calling, stay calm and carefully explain the problem and location to the dispatcher.
2. Notify your supervisor or instructor of the emergency and begin to take the appropriate action warranted by the situation.

6.3 BUILDING EVACUATION

All employees shall:

1. Be aware of all the marked exits from your area and building.

2. Become familiar with posted building evacuation maps, primary & secondary routes of egress, designated meeting places, and the locations of fire extinguishers and pull stations.

3. Know how to activate the building fire alarm system by pulling the handle on one of the red boxes located in the hallway or near the exits, if available.

When the building evacuation alarm is sounded, or when directed to leave by University Police:

1. Walk quickly to the nearest marked exit and ask others to do the same.

2. Assist the handicapped and injured in exiting the building or reaching areas of safe refuge, if possible.

3. Once outside, immediately notify emergency responders if any handicapped/injured people are waiting in an area of safe refuge inside the building, then proceed to the designated meeting area or if not designated, a clear area that is at least 150 feet from the affected building. Keep walkways and streets clear for emergency vehicles. Report your status to your supervisor.

4. Without re-entering the building, be available to assist University Police, the fire department and the University Safety Manager or designee in their attempts to determine that everyone has been evacuated safely.

5. Keep clear of the any incident command posts unless you have important information to report.

6. Do not return to the building until you are told to do so by University Police, the Fire Department, or University Safety Manager.

6.4 FIRE

1. All departments should train their personnel in fire prevention techniques, the use of portable fire extinguishers and basic first aid. For assistance in training, contact University Police or the University Safety Manager.

2. If a fire appears minor and controllable, immediately call University Police at 256-782-5050. Activate the building alarm. If you have been trained in the use of fire extinguishers, locate the nearest one and extinguish the fire yourself, if safe to do so. Otherwise, leave the area and wait for emergency personnel to respond, even if the fire appears to be small.

3. On large fires, immediately call University Police, activate the building alarm, and follow evacuation procedures. If you are able, close all doors on the way out - but do not lock them. Alert people as you go. Exit the building and go to the evacuation assembly point designated for your building.

6.5 TORNADO SAFETY

University Police or designee will activate the emergency alert system to notify the campus community of tornado watches/warnings. Report tornados, funnel clouds, or wall clouds to University Police at 256-782-5050.

A **TORNADO WATCH** means that conditions are favorable for tornados to develop.

A **TORNADO WARNING** means that a tornado has actually been sighted and you should seek shelter immediately.

WHEN A TORNADO APPROACHES, OR IS LIKELY TO APPROACH:

1. In office and or academic Buildings: go to the designated shelter area for that building. If one has not been designated, stand in an interior hallway on a lower floor, preferably in the basement and away from the windows.

2. In small buildings: go to the basement or to an interior part of the lowest level (a closet, bathroom, or interior hall). Try to get under something sturdy. Cover your head with your hands, a cushion, or mattress.
3. Outside: seek shelter inside, preferably in a steel-framed, reinforced concrete building or substantial construction. Go to the center of the building on the lowest floor and stay away from windows. If you cannot seek shelter inside, crouch against a building or crouch in a low-lying area. Cover your head with your hands.
4. In Your Vehicle: Get out of your vehicle and follow the instructions in the preceding paragraph.

6.6 EXPLOSION

In the event an explosion occurs on campus that could render a building area unsafe, take the following actions:

1. Immediately take cover under tables, desks or other such objects that will give protection against glass or debris.
2. After the effects of the explosion have subsided, immediately notify University Police at 256-782-5050.
3. If necessary or directed to do so by University Policy, activate the building alarm system and follow the building evacuation procedures.
   - Be aware of structural damage.
   - Stay away from glass doors and windows.
   - Do not touch or move any suspicious object.
   - Be prepared for a secondary explosion or device.

6.7 BOMB THREAT/IMPLIED ACTS OF TERRORISM

All bomb threats shall be treated seriously. Notify University Policy of all actual or implied threats of terrorism.

1. If you observe a suspicious object or potential bomb on campus, DO NOT HANDLE THE OBJECT. Clear the area and immediately call University Police. Follow the building evacuation procedures in this chapter.
2. If you receive a phone call that a bomb or other explosive device has been placed on campus, gather as much of the following data that you can and report this information to University Police. Follow the building evacuation procedures in this chapter, taking the notes from the phone call with you. Information to be obtained concerning bomb threats/acts of terrorism

   Date/Time of call:
   Exact words of caller:

   Questions to Ask Caller:

   When is the bomb going to explode?
   When did that time start?
   What time is it now by your watch?
   Where is the bomb right now?
   What kind of bomb is it?
   What does it look like?
   Where did you place the bomb?

Why did you plant the bomb?
What is your name?

BOMB THREAT/IMPLIED ACTS OF TERRORISM

Description of the Caller's voice:

Male or Female?
Age of Caller (young, old, etc.)
Caller's accent?
Speech pattern.
Background noises (trains, planes, highway noises)
Does the voice sound familiar? If so, who did it sound like?
What time did caller hang up?
Remarks?

3. If the bomb threat is received by mail, do not handle the letter, envelope, or package any further. Vacate the area at once, call University Police and follow the building evacuation procedures in this chapter.

4. The University Police Department will handle the situation now.

5. If necessary, University Police will evacuate the building.

6. Evacuate the building and follow the procedures as listed under Building Evacuation.

7. Remember, do not return to the building until directed to do so.

6.8 VIOLENT OR CIVIL DISTURBANCE

Everyone is asked to assist in making the campus a safe and peaceful place to carry on business as normally as possible. However, disturbances sometimes do occur, and everyone should be aware of action to be taken.

1. A threatening disturbance should be reported immediately to University Police and the following action taken:

   - Alert all employees in the area of the situation.
   - Lock all doors; secure all files, documents, and equipment.
   - If necessary, cease operations and evacuate the building.

2. If you are the victim or are involved in any on-campus violation of the law such as assault, robbery, theft, overt sexual behavior, etc. DO NOT TAKE ANY UNNECESSARY CHANCES! Notify University Police and provide the following information:

   - Nature of incident
   - Campus location
   - Description of person(s)
   - Description of property

3. Avoid provoking or obstructing anyone participating in a disturbance or demonstration.

4. Assist University Police when they arrive by supplying them with all additional information and ask others to do the same.

5. If a class or lecture is disrupted, request the offending person or persons to leave. If they refuse, call University Police.

6.9 CHEMICAL SPILL

Any campus spillage of a dangerous chemical must be reported immediately to the Office of University Safety Manager and University Police. During normal office hours, call 256-782-8599; after office hours, contact University Police at 256-782-5050.

1. When reporting, be specific about the nature of the material involved and location of accident. University Safety and University Police will respond immediately.

2. Vacate the affected area at once and seal it off to prevent further contamination of other areas. Warn everyone that approaches the area.

3. Persons who may be contaminated because they were in the immediate area affected by the spill are to avoid contact with others as much as possible. Remain in the vicinity and give their names to University Safety personnel. Required first aid and clean up by trained individuals should be started at once.

4. If necessary, because of the danger involved, or if directed to do so by University Safety personnel, activate the building alarm system and follow the building evacuation procedures outlined in this chapter.

6.10 UTILITY PROBLEMS

1. **Lighting** - Most major campus buildings are equipped with emergency lighting that will provide enough illumination in corridors and stairs for safe exiting. In the event of a major utility failure contact Capital Planning & Facilities at 256-782-5450. It is advisable for each department to have flashlights available.

2. **Elevator Failure** - All campus elevators are equipped with emergency phones or emergency bells. Stay calm and use them. Help will arrive shortly.

3. **Plumbing Problems** – For minor plumbing problems, call Capital Planning & Facilities at 256-782-5450. For major problems that involve flooding, cease using all electric equipment, vacate the area and notify your supervisor, or contact Capital Planning & Facilities at 256-782-5450.

4. **Gas Leak** - Cease all operations, immediately vacate the area, and notify your supervisor and contact University Police. Do not use electronic phones or equipment until you are clear of the affected area. If directed, activate the building alarm, and follow the building evacuation procedures.

5. **Ventilation** - If smoke or burning smells come from the ventilation system, contact University Police, and report it to the University Safety Manager at 256-782-8599. If directed, or if there is potential danger to the building occupants, activate the building alarm and follow the building evacuation procedures outlined in this chapter.

6.11 PHONE NUMBERS

FOR ALL EMERGENCIES (Includes medical, criminal, fire, threats, or disturbances)

University Police Department	256-782-5050

FOR CHEMICAL SPILLS & ENVIRONMENTAL CONCERNS

University Police Department	256-782-5050
University Safety Manager	256-782-8599

NATIONAL EMERGENCY NUMBERS

National Poison Control	800-282-5846
National Spill Response	800-424-8802

FOR NON-EMERGENCY CONCERNS

University Police Department-	256-782-8888
University Safety	256-782-8599
JSU Student Health Center	256-782-5310

CHAPTER 7 – *GENERAL SAFETY RULES*

7.1 INTRODUCTION

The most prominent hazards in the workplace are chemical, physical, biological, and ergonomic hazards. The health and safety standards included in the following chapters are furnished for the guidance of all University employees and students. It should be understood that these are minimum standards that apply to all University operations, both on and off campus. Most are drawn from existing standards promulgated by either Federal or State occupational safety and health regulations. The remaining guidelines are derived from various consensus standards published by nationally recognized private organizations such as: National Fire Protection Association, American National Standards Institute, American Conference of Governmental Industrial Hygienists, and others.

In the event that existing or future Federal, or State regulations are found to differ from the requirements contained in this manual, those legally accepted regulations will be followed.

1. University employees shall not energize, use, repair, or operate any machine, tool, equipment, vehicle, or other dangerous material unless authorized by a supervisor.

2. Safety devices furnished by the University or department must be used. Removal or non-use may be authorized only by the supervisor and when approved by the department and University Safety.

3. Approved personal protective equipment shall be worn whenever the exposure indicates the need for it as specified in Section II, Chapter 8, "Personal Protective Equipment".

4. Only properly maintained and adjusted equipment, machinery and tools may be used. University-provided tools may not be modified unless authorized by a supervisor.

5. Floors must be kept clean and free of materials or substances that might constitute a tripping or slipping hazard. Employees responsible for any spilled material or substance shall clean it up immediately.

6. Horseplay, running, and practical jokes are prohibited in buildings.

7.2 CLOTHING AND SAFE DRESS

1. Employees will wear clothing appropriate to their work assignments. Clothing will be clean, dry, and in good condition.

2. Supervisors will inform their employees of clothing requirements and associated hazards.

3. All clothing should be well fitted, with no loose or flowing appendages. Long sleeves should be buttoned at the wrist or rolled up neatly past the elbow. The practice of working without a shirt is not allowed.

4. Unless working conditions dictate otherwise, employees must wear shoes while at work. Shoes should be well-fitted with good soles and heels and a style that completely covers the foot. Open-toe shoes or lightweight shoes of the canvas "sneaker" type may not be safe. Safety shoes or safety toecaps are mandatory in foot-hazardous work. Persons with bare feet are not allowed in campus buildings.

5. Long hair must be secured when working around machinery.

6. Jewelry such as rings, pendants, necklaces, earrings, watches (other than those with breakaway bands), etc., shall not be worn whenever they constitute an electrical or physical hazard, i.e. working around moving machinery, electrical or electronics equipment, etc.

7.3 CONFINED SPACES

Confined Spaces, as defined by OSHA regulations, are spaces that:

1. Are large enough and so configured that an employee can bodily enter and perform assigned work; and
2. Have limited or restricted means for entry or exit (for example, tanks, vessels, silos, storage bins, hoppers, vaults, and pits are spaces that may have limited means of entry.); and
3. Are not designed for continuous employee occupancy.

Confined Spaces must not be entered into without the necessary training, personal protective equipment, a safe system of work, and a Confined Space Entry Permit from University Safety. Testing for the presence of combustible or dangerous gases, oxygen deficiency or rich atmosphere shall be made with an instrument approved by University Safety. All non-exempt University personnel and private contractors shall not be permitted to enter in a confined space unless their entrance has been authorized by University Safety and issued a confined space entry permit. If in doubt the University Safety office must be contacted prior to entry of any confined space. The Confined Space Entry Program is contained in a separate written document.

7.4 CONTRACTOR/VENDOR SAFETY

JSU's responsibilities with regard to contracted services are:

1. To determine which areas the contractor or vendor will operate and the possible safety and health exposures in those areas.

2. To communicate health and safety information and training requirements to the contractor and to obtain written proof that the contractor will relay pertinent safety and health information to his/her employees.

3. JSU reserves the right to stop work that does not meet our safety requirements.

Contractors and vendors will be held accountable for relaying this information to their employees.
Before work begins, the contractor must provide all written safety procedures/documentation pertinent to the job to the JSU Project Superintendent or to the Office of University Safety.

7.5 FLEXIBLE ELECTRIC CORDS

1. Flexible cords will be maintained in good repair and must bear the Underwriters Laboratory label (UL) or meet standards of the NFPA 70. Do not use cords that are frayed or damaged.

2. Flexible cords should be no longer than 6-8 feet in length, limited to temporary use, and never used across traveled pathways unless suitably protected to avoid damage and the creation of tripping hazards.

3. Cords and adapter plugs without grounds are not permitted on campus.

4. Only University Electricians may splice electrical cords.

5. Cords shall not be tacked onto surfaces, nor shall they be strung across ceilings, over pipes, near hot or wet surfaces or near chemical or physical hazards. Furthermore, cords shall not be subjected to stress or tension, pressure or bending. For additional details, see Section II, Chapter 13, "Electrical Safety".

7.6 LIFTING PROCEDURES

The National Institute of Occupational Safety and Health (NIOSH) revised its lifting guidelines. The basic concept is to have a load constant of 51 pounds (23 kg.). This is the maximum that can be lifted or lowered safely by an individual in good physical shape on a continuous or repetitive basis. Regardless of the weight, always size up the load. Make sure you can handle it by yourself. If not, get help!

The basic rules for proper lifting are:

1. Approach the load and size it up (weight, size, and shape). Consider your physical ability to handle the load. Look at your intended path and clear all hazards. Have someone spot you to open doors. Select the location where you intend to place the item. Select a location as close to your waist as possible, such as a table or chair. Lift a corner of the item to determine its weight. Assess how you intend to pick up the item and select gloves if needed.

2. Stand with your feet shoulder-length apart and close to the object to be lifted.

3. Bend the knees to the degree that is comfortable and get a good handhold. Keep your back straight and lift the load with your legs, smoothly and evenly. If the weight is too heavy or too uneven, put down the object by reversing this step and get some help.

4. Adjust the object into carrying position, making no turning, or twisting movements until the item is secure and you have a firm grip. Keep the object as close to your body as possible.

5. Turn your body with changes of foot position.

6. Set down the load by using your leg and back muscles, comfortably lower the load by bending your knees. When load is securely positioned, release your grip.

7. Use moving devices whenever possible such as hand trucks, carts and dollys.

CHAPTER 8 – *PERSONAL PROTECTIVE EQUIPMENT (PPE)*

8.1 INTRODUCTION

Protective equipment, including personal protective equipment for eyes, face, head, and extremities, protective clothing, respiratory devices, and protective shields and barriers, shall be provided, used, and maintained in a sanitary and reliable condition wherever it is necessary by reason of hazards of processes or environment, chemical hazards, radiological hazards, or mechanical irritants encountered in a manner capable of causing injury or impairment in the function of any part of the body through absorption, inhalation or physical contact. Where employees provide their own protective equipment, JSU shall be responsible to assure its adequacy, including proper maintenance, and sanitation of such equipment. Supervisors, in conjunction with the Office of University Safety, shall assess the workplace to determine what hazards are present, or are likely to be present, in the workplace which necessitates the use of Personal Protective Equipment (PPE).

All personal protective equipment shall be of safe design and construction for the work to be performed. Supervisors in conjunction with University Safety shall assess the workplace to determine if hazards are present, or are likely to be present, which necessitate the use of personal protective equipment (PPE). If such hazards are present, or likely to be present, the supervisor shall:

- Select, and have each affected employee use, the types of PPE that will protect the affected employee from the hazards identified in the hazard assessment;
- Communicate selection decisions to each affected employee; and,
- Verify that the required workplace hazard assessment has been performed through a written certification that identifies the workplace evaluated; the person certifying that the evaluation has been performed; the date(s) of the hazard assessment; and, which identifies the document as a certification of hazard assessment.
-

Defective or damaged personal protective equipment shall not be used.

8.2 TRAINING

The supervisor shall provide, or make provision for, training to each employee who is required by this section to use PPE. Each such employee shall be trained to know at least the following:

- When PPE is necessary;
- What PPE is necessary;
    - How to properly don, doff, adjust, and wear PPE;
- The limitations of the PPE; and,
- The proper care, maintenance, useful life, and disposal of the PPE.

Each affected employee shall demonstrate an understanding of the training specified in this section, and the ability to use PPE properly, before being allowed to perform work requiring the use of PPE.

8.2 PROTECTIVE CLOTHING

Protective clothing may be required for employees whose work exposes parts of their body to hazardous substances or objects not otherwise protected, as required by other sections of this chapter.

Clothing and protective clothing appropriate for the work being done will always be worn. This may include laboratory coats, raincoats, aprons, full jump suits, bright reflective vests, etc.

Clothing will be clean and serviceable.

8.3 HEARING PROTECTION

Ear protection devices will be provided by the University and worn when administrative and engineering controls do not reduce noise hazards to acceptable levels.

All supervisors whose employees are engaged in hazardous noise operations will be responsible for insuring workers wear approved hearing protection devices (ear plugs or muffs).

Each employee must wear appropriate hearing protection whenever exposed to hazardous noise. Workers can estimate a hazardous noise area if they find it difficult to hear a loud voice at a distance of 1 foot.

Earmuff-type hearing protection devices are generally recommended. However, earplugs may be worn if fitted by competent persons. Risk Management/ Environmental Health & Safety can provide assistance in this area.

Hearing protection devices should be washed and inspected on a periodic basis to prevent ear infections. Earplugs can be washed using any dish soap and water and allowing them to dry before use or storing. The rubber seals on earmuffs should be inspected periodically to ensure they are pliable and clean.

8.4 EYE AND FACE PROTECTION

Employees and students working in locations where eye hazards are present due to flying particles, hazardous substances, heat, sparks, or injurious light rays, will be provided with eye protection. This eye protection may be in the form of impact-resistant glasses, goggles, face shields, or shields/screens.

The University will provide eye and face protection for employees as needed. Students may be required to provide their own eye protective devices if not available from the University. Both the employee and student will wear eye protection in eye-hazardous areas.

All campus visitors who enter eye-hazardous areas will be provided with proper eye protection for their visit only.

Face and eye protective devices will be cleaned on a periodic basis (weekly) and inspected to insure equipment is in good repair. Devices in need of repair will not be used until defects are corrected.

Protection will be taken against radiant energy when welding, burring, or cutting. The use of welding type filter lenses must be appropriate for the type of work performed.

Full face shields or hoods with shields, combined with chemical splash goggles will be worn when handling reactive, corrosive, or cryogenic liquids.

Transparent shields or barricades may be used when performing laboratories that are potentially dangerous. However, even if a shield or barricade is utilized, the person must also wear adequate personal protective equipment; i.e. eye and face protection and/or aprons.

8.5 FOOT PROTECTION

Appropriate foot protection will be required for employees who are exposed to possible foot injuries from 1) hot, corrosive, or poisonous substances; 2) falling objects; 3) crushing or penetrating actions, or 4) abnormally wet locations.

Footwear that is defective or inappropriate will not be worn.

Full-coverage type safety, work or dress shoes must be worn in all shops, laboratories and other areas that are designated as foot hazardous areas. Open type, high heel, soft leather, or canvas shoes will not be worn in these areas.

8.6 HAND PROTECTION

Employers shall select and require employees to use appropriate hand protection when employees' hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns; thermal burns; and harmful temperature extremes.
Employers shall base the selection of the appropriate hand protection on an evaluation of the performance characteristics of the hand protection relative to the task(s) to be performed, conditions present, duration of use, and the hazards and potential hazards identified.

8.7 HEAD PROTECTION

Where applicable, supervisors shall ensure that each affected employee wears a protective helmet when working in areas where there is a potential for injury to the head from falling objects.
The supervisor shall ensure that a protective helmet designed to reduce electrical shock hazard is worn by each such affected employee when near exposed electrical conductors which could contact the head.
Head protection must comply with any of the following consensus standards:

- American National Standards Institute (ANSI) Z89.1-2009, "American National Standard for Industrial Head Protection,";
- American National Standards Institute (ANSI) Z89.1-2003, "American National Standard for Industrial Head Protection,"; or
- American National Standards Institute (ANSI) Z89.1-1997, "American National Standard for Personnel Protection--Protective Headwear for Industrial Workers—Requirements."

8.8 LIFELINES, SAFETY HARNESSES AND NETS

Approved safety harnesses and lifelines will be worn by employees who work in excess of 6 feet from the ground or floor and no other protective device is available to prevent falls. Lifelines will be secured to a substantial member of the structure or to securely rigged lines, using a positive-descent control device.

If a worker's duties require horizontal movement, rigging will be used so that the attached lifeline will slide along with him.

Lifelines and safety harnesses will only be used for employee safety. Any lifeline or safety harness used in an actual emergency will be removed from service and never used as a lifeline again.

Lifelines will be capable of supporting a minimum dead weight of 5,400 pounds.

Lifelines subject to fraying or damage will be protected and have a wire rope center.

Where the work elevation is 25 feet or more above the floor or ground and when the use of safety harnesses and lifelines are impractical, safety nets may be used.

8.9 RESPIRATORY PROTECTION

Any person required to wear a respirator shall comply with the written Respiratory Protection Program in Appendix I.

A respirator is a personal protective device used to protect the wearer from inhalation of harmful levels of airborne contaminants. The use of respirators is acceptable only when engineering or work practice controls (e.g., local exhaust ventilation) are inadequate or not feasible, or while these controls are being designed or constructed.

Respirators must be carefully selected, properly fitted, regularly inspected, and cleaned, and repaired when broken. Wearers must be medically evaluated for respirator use and trained in the appropriate use, care, maintenance, and limitations of respiratory protective devices. Work area environments must be periodically evaluated to determine the appropriate level of respiratory protection necessary.

CHAPTER 9 – *SIGNS, LABELS, AND COLOR CODES*

9.1 ACCIDENT PREVENTION SIGNS

Accident-prevention signs are intended to indicate specific hazards. All signs shall conform to the requirements of this chapter and each sign will include the following:

1. An approved heading that indicates the relative hazard.

2. A statement of the type of hazard or action required (or to be avoided). Signs shall always be visible when work is being performed and will be removed or covered promptly when the hazard(s) no longer exist.

   a. Danger signs are to be used only where an immediate hazard exists. They indicate that special precautions must be taken.

DANGER - "HIGH VOLTAGE"
DANGER - "NO SMOKING"
DANGER - "KEEP OUT"

   b. Caution signs are to be used only to warn against potential hazards or to caution against unsafe practices. They indicate possible hazards against which proper precautions should be taken.

CAUTION - "KEEP AISLES CLEAR"
CAUTION - "EYE PROTECTION REQUIRED"

   c. Safety instruction signs are to be used where there is a need for general instructions and suggestions relative to safety measures.

THINK - "REPORT UNSAFE CONDITION"
BE CAREFUL - "WALK DON'T RUN"

   d. Directional signs are for providing specific direction-type information.

"THIS WAY OUT"
"FIRE EXTINGUISHER"

   e. On radiation warning signs, the standard color of the background will be yellow, with the symbol magenta or black. Any letters used against the yellow background will be magenta or black. This symbol may not be used for any other purpose.

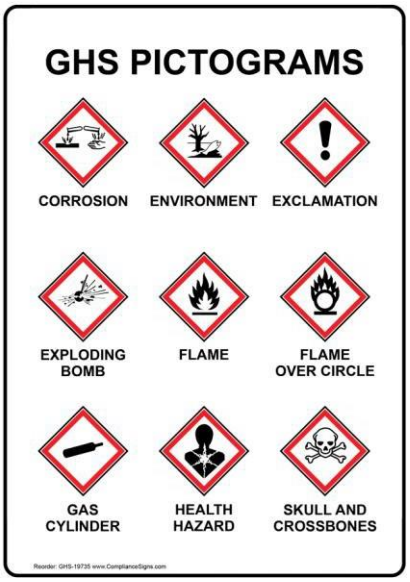
   f. The biological hazard warning sign will be used to signify the presence of a biohazard. The primary symbol color should be fluorescent orange but may include contrasting colors as approved by University Safety. This symbol may not be used for any other purpose.

9.2 LABELING OF SUBSTANCES

All containers containing substances will be labeled or marked with appropriate warning legend as defined in this section.

1. Labels will not be removed from containers if any of the substances named on the labels remain in the containers. Only those substances listed on the label of containers will be placed in the containers. Containers may be reused for other substances only if the original label is removed and container properly rinsed to remove the original substance.

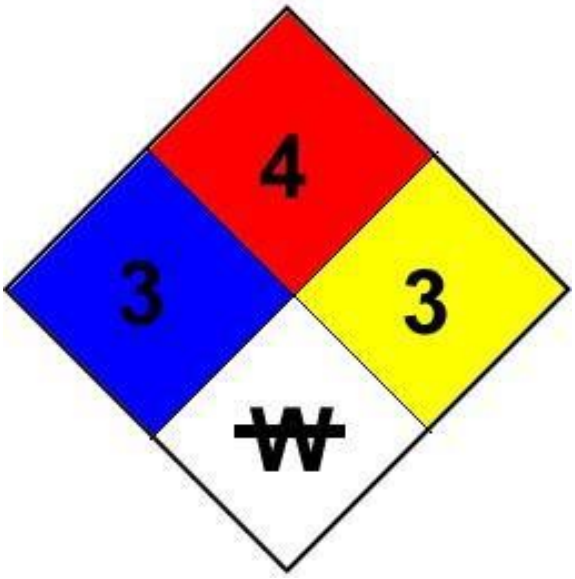
2. The Globally Harmonized System of Classification and Labelling of Chemicals (GHS) provides a single, uniform system to address classification of chemicals, labels, and Safety Data Sheets (SDSs).



3. The National Fire Protection Associations (NFPA) "Hazard Identification System" is a precise way of labeling materials as to their hazardous properties. Emergency first-responders are trained in this system primarily and, therefore, it is recommended that both containers and work areas using hazardous chemicals employ this label system. Contact University Safety for more information.

The NFPA label system Identifies the hazards of a material In terms of three principal categories, namely, ”health,” flammability,” and “reactivity” (instability); this indicates the order of severity numerically by five divisions ranging from “four (4),” indicating a severe hazard, to “zero (0),” indicating no special hazard.

A diamond-shaped diagram divided into four diamond shapes presents this information. The “health” hazards are always to be shown by the diamond on the left (blue background or blue numerals). The “flammability” hazard is always to be shown by the diamond at the top (red background or red numerals). “Reactivity” hazards are always to be shown by the diamond on the right (yellow background or yellow numerals). The bottom diamond (white) will indicate specific types of hazard including acid, alkali, corrosive, oxidizer and “use no water.”



9.3 ACCIDENT PREVENTION TAGS

Tags are a temporary means of warning of a hazardous condition, defective equipment, radiation hazards, etc. The tags are not to be considered as a complete warning method, but should be used until means can be employed to eliminate the hazard; for example, a "DO NOT START" tag on power equipment will be used for a few moments or a very short time until the switch in the system can be locked out;

1. "**DEFECTIVE EQUIPMENT**" tag will be placed on a damaged ladder and immediate arrangements made for the ladder to be taken out of service and sent for repair.

2. "**DANGER**" tags will be affixed to equipment that is being held out of service for repair or for equipment that poses an immediate hazard to the user. Before repair work is performed on equipment, a danger tag shall be attached, and the equipment will be locked out of service.

3. "**CAUTION**" tags must be affixed to equipment that poses a potential hazard to the user. These tags are also used to warn against an unsafe practice.

4. "**NOTICE**" tags are to be utilized for conveying safety information regarding equipment or conditions.

6. Other tags such as radiation or biological hazard will use the same symbols and colors as required on signs.

During routine inspections of campus areas, University Safety personnel may affix red danger tags to equipment that is observed in a state of disrepair or is deemed imminently or potentially hazardous. A time limit may be established for correction. The tag may be removed by the department and forwarded by campus mail to the Office of University Safety after corrections are made. Correcting deficiencies is the responsibility of the department head.

9.4 COLOR CODE FOR MARKING PHYSICAL HAZARDS

The six colors identified in the ANSI Safety Color Chart, as found in ANSI Z535, and their corresponding meanings/uses are as follows:

Red: Used for danger signs, flammable liquids, fire protection equipment emergency stop buttons, etc.
Orange: Used for warning signs and an indication of energized machines or equipment.
Yellow: Used for caution signs and alerts of physical hazards.
Green: Used for first aid equipment and safety information.
Blue: Used for property policies, facility standards, and any other information that is not directly safety related.
Purple: User-defined – a manager can assign this color as they see fit in their facility, department, or functional area.

9.5 PIPE MARKING

1. Color bands containing a lettered legend of pipe contents will be installed on all campus piping systems used to transport hazardous substances such as gases, vapors, liquids, etc.

2. Marking is to be done at points where confusion would introduce hazards to employees such as valves or outlets.

3. Capital Planning & Facilities will designate the colors to be used for all pipes.

CHAPTER 10 – *GROUNDS*

10.1 ANIMALS ON CAMPUS

There are significant health and safety hazards and nuisances created by unrestrained animals on campus. It is important that personnel do not encourage stray animals to remain on campus by putting out food. Please contact the City of Jacksonville Animal Control at 256-435-7611 to prevent unwanted animals from overpopulating and living on campus. Accordingly, the following guidelines will be enforced relating to animals:

1. Animals will not be brought onto the University property unless they are under the complete control of the owner and present no hazard to people. Its owner will not regard the wearing of a muzzle by a dog as control.

2. Dogs may not be brought onto the campus grounds except where:

   a. They are secured to a leash, cord, chain, or similar direct physical control of a maximum length of six (6) feet, in which the other end is retained by a person; or,

   b. Securely confined in a vehicle, cage, or similar restrictive convenience.

3. Animals, including dogs, may not be tethered on campus.

4. Animals are not permitted in any campus building except for:

   a. Service animals and emotional support animals serving their owners.

   b. Animals involved in authorized research.

5. Dogs and cats must have a valid license as evidence of current rabies vaccinations.

6. Animals, including dogs and cats, on campus, found running at large or without evidence of current rabies vaccination are subject to being picked up by the City of Jacksonville Animal Control.

7. The West Nile Virus has brought new awareness to the present of dead birds on campus. If you find a dead bird, and the cause of death is undetermined, call University Safety for pick up.

10.2 PEST CONTROL

1. With few exceptions, pesticides are potentially toxic to human beings and in some cases are flammable or explosive. All persons who mix, store, or apply pesticides should have full knowledge of the characteristics, effects, and precautions applicable to the material being used.

2. All University employees engaged in pesticide application work are to be licensed by the State of Alabama.

3. Private contractors who apply pesticides on campus must also be licensed by the State of Alabama.

4. Pesticides and other chemicals used in pest control must be used in accordance with instructions on the container label.

5. Do not spray liquid pesticides on electrical outlets or equipment; use dust or powder.

6. Chemicals consisting of high vapor toxicity must not be applied in large quantities or in unventilated areas.

7. Surplus pesticides must be disposed of in a manner that will not permit harm to people, animals, or the environment. Contact the Office of University Safety for proper disposal procedures.

8. The spray equipment tank should be equipped with a leak-proof latch. The mixing system should be so designed that it eliminates spills during transfer and mixing.

9. Do not apply pesticides in laboratories, office areas or any occupied areas without authorization from the individual responsible for that area.

10. Persons requesting pesticide application must contact all personnel in the affected area.

11. All necessary safety equipment must be available during application of pesticides, such as respirators, gloves, face shields or goggles and aprons if the job warrants their use.

10.3 EXCAVATIONS

1. Employees will not work in or adjacent to any excavation until a reasonable examination has been made to determine that no conditions exist exposing them to injury from moving ground.

2. Prior to digging an excavation, efforts will be made to determine if underground installations (e.g. sewer, electric lines, etc.) might be encountered, by calling 800-282-7411, 72 hours prior to excavation.

3. The walls and faces of all excavations 5 feet or more in depth that employees will enter shall be effectively shored, benched, sloped, or a combination thereof. University Safety is available for guidance and approval of such safety measures.

4. Excavation work will, at all times, be under the immediate supervision of someone with authority and qualifications to modify the shoring system or work methods, as necessary, to provide greater safety. They shall examine the material under excavation and improve the shoring or methods beyond the minimum requirements, as necessary, to ensure protection of workmen from moving ground. At least one person must remain above ground to summon help if needed.

5. Excavated material will be prevented from falling back into the area where men are working. In no case will the excavated material be placed closer than 2 feet from the edge of the excavations 5 feet or more in depth. Maintain at least 1-foot clearance for lesser depths.

6. If the excavation depth is equal to or greater than 4 feet, convenient and safe means will be provided for workmen to enter and leave the excavated area. This will consist of a standard stairway, ladder or ramp securely fastened in place at suitably guarded or protected locations so as to require no more than 25 feet of lateral travel.

7. No excavation will take place below the level of the base of an adjacent foundation, retaining wall or other structure until it has been determined that such excavation will in no way create a hazard or until adequate safety measures have been taken. If sidewalks are to be undermined, they shall be supported to carry a minimum live load of 125 pounds per square foot.

8. Adequate barrier physical protection will be provided at all excavations. All wells, pits, shafts, etc., will be barricaded or covered upon completion of exploration and similar operations. Temporary walls, pits, shifts, etc., shall be backfilled.

9. Hard hats are required in excavation deeper than 6 feet.

10. Workers shall be clear of the excavation when earth-moving equipment is in operation nearby. Powered machinery and other heavy equipment shall be at least 25 feet away from the excavation when people are working.

10.4 TREE TRIMMING

1. Employees engaged in pruning, trimming, removing, or clearing trees will be required to consider all overhead and underground electrical power conductors with potentially fatal voltages. Electric shock will occur when an employee, by either direct or indirect contact with an energized conductor, energized tree limb, tool, equipment or other object, provides a path for the flow of electricity to a grounded object or to the ground itself.

2. The Landscaping & Grounds Supervisor will ensure that an inspection is made before climbing, entering, or working around any tree to determine whether an electrical power conductor passes within reaching distance of an employee working in the tree. If any of these conditions exist either directly or indirectly, an electrical hazard will be considered to exist unless de-energizing the lines or installing protective equipment can remove the hazard.

3. Only qualified line clearance tree trimmers familiar with the special techniques and hazards involved in line clearance will be permitted to perform the work if it is found that an electrical hazard exists.

4. During all tree-working operations aloft where an electrical hazard exists, there will be a second employee qualified in line clearance tree trimming within normal voice communication.

5. The supervisor responsible for the tree trimming shall determine the appropriate PPE for the task.

    a. Gloves and eye protection should be worn.

    b. Hard hats are required when falling hazards are present.

    c. Foot protection is required when hazards to feet are present.

    d. Face shields and chaps are required when operating a power saw.

CHAPTER 11 – *BUILDINGS*

11.1 OFFICE SAFETY

The day-to-day responsibility for the safe condition of all buildings, equipment, property, and security rests with individual department(s) and/or building manager(s). The Office of University Safety may be called upon at any time for assistance. It is important to remember that the University does not have theft insurance; therefore, property loss due to an unsecured area is not covered by insurance.

1. Desks will be arranged so that electrical and telephone outlets and leads are not tripping hazards.

2. Electric cords on machines and desk lamps must be kept in good repair. Cords are to be replaced when outer insulation is broken, cracked, or worn.

3. Office furniture in disrepair should be repaired or replaced promptly.

4. Individual upright shelves, lockers and cabinets will be fastened to floors or walls if the possibility of overturning exists. Where there are two (2) or more, they will be fastened together.

5. Not more than one (1) drawer of a file cabinet may be open at one time. Drawers should be closed when not in use.

6. When it is necessary to store material on top of lockers or file cabinets, consider the weight, shape, and stability of the material.

7. Do not tilt back in straight chairs. When sitting, keep both feet on the floor. Have defective chairs repaired or replaced promptly.

8. Use knives, razor blades, scissors, or shears with care. Single-edged cutting instruments will be sheathed when not in use.

9. Spindle (spike) files should not be used.

10. Paper cutters will be equipped with a safety bar. Blade spring tension will be adjusted so that the blade will not fall by its own weight.

11. All fans will be equipped with suitable guards. Fans will not be placed where they might be struck.

12. Unplug electrical equipment before cleaning or servicing.

13. Personnel will not put broken glass in wastebaskets. If glassware has been broken, pack the material in heavy paper or cardboard, mark it "broken glass" and placed alongside the wastebasket.

14. Small ladders and stands used in some offices will be equipped with treads of non-slip material and safety feet. Never stand in chairs. Ladders having broken or split side rails, steps, or other parts should be immediately taken out of service.

15. All photocopiers shall have adequate ventilation and should be located at least 10 feet from any permanent employee workstation. There are two basic types of office copy machines in use on campus:

    a. Dry photo copiers that use a powder type toner material, and

    b. Wet photocopiers that sometimes use a combustible hydrocarbon-based toner.

11.2 BUILDING INSPECTIONS

The number of persons permitted in any classroom, laboratory, assembly areas, dining rooms, shops and vocational rooms is the responsibility of the State Fire Marshall, in accordance with NFPA standards. Any deviation from posted limits must have the approval of the Fire Marshall. Occupants of University buildings will make periodic inspections to keep hazards at a minimum in all areas. Items that should be included in these inspections include:

1. Good housekeeping.

2. Condition of stair treads, floor tiles and carpeting for tripping hazards.

3. Exposed floor electrical and telephone outlets for tripping hazards.

4. Loose stairway railings.

5. Cracked windows.

6. Protrusions in walls and doorframes.

7. Stained ceiling tiles, excessive moisture, humidity, or visible mold growth.

8. Office furniture and machines in need of repair.

9. Proper storage of materials.

10. Adequate lighting and ventilation.

11. Insects and other pests.

12. Proper closing and locking of security doors.

Departments should document the location and descriptions of all discrepancies noted and submit requests for correction to Facilities Work Request Desk at 256-782-5450 or complete the electronic form available at the Capital Planning & Facilities departmental website.

University Safety implemented an annual building inspection schedule which can be viewed at our website under “Annual Schedules.”

The purpose of these inspections is to evaluate the building for concerns relating to Environmental Health Hazards, ADA, Maintenance, Risk Management and Safety (Fire, Electrical, Slip, Trip Fall, etc.). The building

is inspected from “top to bottom” while looking high and low for any concerns or items for improvement, both inside and outside.

These inspections will be conducted in cooperation from the University Building Inspector, University Safety Manager, ADA Coordinator, UPD Security Supervisor, and others as deemed necessary by the Office of University Safety.

11.3 MICROWAVES

1. Follow the manufacturer's operating instruction manual for use and installation

2. Before operation, examine the oven for possible damage caused during shipping.

3. Maintain at least 18 inches from the microwave while in use.

4. Never insert objects through the window screen or the door seal of a microwave oven.

5. Do not tamper with or modify the oven's safety interlocks or controls.

6. Never operate an empty oven. If testing, use approximately one half-pint of water in a glass or ceramic container.

7. Keep oven, oven door, and door seals clean. Utilize a suitable detergent and scrubbing device as recommended by the manufacturer.

8. Have the oven serviced at the prescribed intervals by a qualified microwave oven serviceman.

9. When in doubt, have the microwave oven surveyed. Contact University Safety for assistance.

10. Microwave ovens that are used for science purposes should be labeled "For Laboratory Use Only – Not for Food Preparation". Microwaves near laboratories or chemical storage - which are intended for food preparation - should be labeled "Food Only - No Chemicals."

11.4 AISLES AND CORRIDORS

1. Every portion of every building that has permanently installed seats, tables, equipment, or similar materials will be provided with aisles leading to an exit.

2. Where aisles are required, equipment will be so arranged and spaced as to provide not less than 6 feet, 8 inches headroom. If existing installations exist that do not afford the minimum headroom clearance, and correction is impractical, the obstruction should be padded, or a suitable warning sign put in place.

3. Every corridor will be not less than 44 inches in width.

4. Corridors will have a clear height of not less than 7 feet measured to the lowest projection from the ceiling.

5. The required width of corridors shall be unobstructed by furniture, storage, or other items.

11.5 DOORS

1. Every door required to serve as an exit will be designed and constructed to allow an obvious and direct way of exit travel.

2. Any door used as an exit will be so designed and installed that when a force is applied to the door on the side from which egress is to be made, it will swing in the direction of exit travel. The opened door will not obstruct the exit width.

3. Every required exit doorway shall be of a size as determined by NFPA standards for occupancy of the building.

4. Exit doors will be able to be opened from the inside without the use of a key or any special knowledge or effort, unless there is a readily visible, durable sign on or adjacent to the door informing the building occupants that the door is locked.

5. A latch or other fastening device on a door will be provided with a knob, handle, panic bar, or other simple type of releasing device. The method of operations should be obvious even in darkness.

6. A door designed to be kept normally closed as a means of egress, such as a door to a stairwell, will be provided with a reliable self-closing mechanism, and will not at any time be secured in the open position.

7. When a door is required to be equipped with panic hardware, the panic hardware will cause the door latch to release when sufficient force is applied to the releasing devices in the direction of exit travel. No device will be installed or maintained at any time which prevents the free use of the door for purpose of egress.

8. Doors swinging both ways will be provided with view areas. One view area will be provided for each door of swinging double doors.

9. No turnstile or similar device to restrict travel to one direction will be so placed as to obstruct egress.

11.6 ELEVATORS

1. In each elevator there will be posted a card or plate indicating the safe carrying capacity. The safe capacity for passenger elevators will be expressed in terms of the maximum number of passengers and for freight elevators in terms of the number of pounds. The rated capacity will never be exceeded.

2. Self-service elevators will have operating instructions and emergency procedures clearly outlined and posted inside the car.

3. Passengers will guard against tripping when entering or leaving an elevator. No one will get on or off an elevator while it is in motion.

4. Passengers will not use freight elevators unless they are authorized for passenger use. Elevator cars not authorized for passenger use will carry signs to that effect.

5. Passenger elevators and automatic operation freight elevators will be provided with an emergency alarm system, operable from within the car, which will provide effective means for summoning assistance at all hours in case of emergency.

6. All exposed equipment and devices will be guarded to protect against accidental contact.

11.7 EXITS

1. Every building or usable portion thereof will have at least one exit and will have not less than two exits where required.

2. When more than one exit is required from a story, at least two of the exits will be remote from each other and so arranged and constructed as to minimize any possibility that both may be blocked by any one fire or other emergency condition.

3. Exits will be so located and arranged that they are always readily accessible. Where exits are not immediately accessible, conveyances to at least two exits by separate ways of travel will be maintained.

4. Exits from a room may open into an adjoining or intervening room or area provided such adjoining room provides direct access to an exit.

5. Exits will be so arranged so that there will be no pockets or dead ends exceeding 20 feet in length in which occupants may be trapped.

6. All exits will discharge directly to the street, or to a yard, court, or other open space that gives safe access to a public way.

7. No obstruction or storage will be placed within the required width of an exit.

8. Exit signs will be displayed when required by code.

9. The location, color, size, and design of each exit sign should be considered to ensure high visibility. No decorations, furnishings, or equipment that impairs visibility of an exit sign will be permitted.

10. Every sign will be suitably illuminated by a reliable light source and maintained on a separate circuit or separate source of power.

11.8 WINDOW CLEANING

1. Employees are not permitted to clean windows in any buildings unless means are provided to enable such work to be done in a safe manner.

2. Window-cleaning employees will be provided with safety equipment and devices, such as elevating platforms, rolling scaffolds, suspended scaffolds, or extension ladders.

3. Window-cleaning employees will be instructed in the proper use of all equipment provided to them and will be supervised during the use of the equipment and safety devices to insure that safe working practices are followed.

4. All employees required to clean windows shall use safety devices as required by this manual.

11.9 COMMON AREAS

1. Every place of assembly will maintain aisle and/or corridors in accordance with the provisions of this Chapter "Corridors and Aisles."

2. Fire extinguishers will always be visible and accessible.

3. No person will permit overcrowding or admittance of any person beyond the approved capacity of any place of public assemblage.

4. No person will cause or permit any open flame to be used in any place of public assembly except when used in conjunction with approved heating or cooking appliances, or with special approval from the Office of University Safety and within the polices in Chapter 12 (12.2).

11.10 ELEVATED WORKSPACE ACCESS

Every permanent elevated location, where there is machinery, equipment, or material that is customarily operated, adjusted, or otherwise handled, will be provided with a safe platform or maintenance runway. Access will be by means of either fixed ladders or permanent ramps or stairways.

1. Guardrails will be provided on all open sides of unenclosed roof openings, open landings, balconies or porches, platforms, runways, ramps, or working levels more than 30 inches above the floor ground, or other working area. Wherever guardrail protection is required state or federal standards will be applied.

2. A guardrail will consist of top rail, mid rail or equivalent protection, and posts, and will have a vertical height within the range of 42 inches to 45 inches from the upper surface of the top rail to the floor, platform, runway, or ramp level. Such rails will be so constructed as to withstand a force of 200 pounds applied downward or horizontally at any point.

CHAPTER 12 – *FIRE PROTECTION*

12.1 INTRODUCTION

All fires shall be reported to JSU Police Department and the Office of University Safety.

1. All drapes, curtains, drops and all other similar material located in corridors, stairways, lobbies, passageways, and balconies will be made from a nonflammable material. In addition, no decorative material shall conceal exit lights, fire alarms, hose cabinets, or fire extinguisher locations.

2. Fire evacuation maps shall be posted in each occupied building and indicate where to assemble in the event of an evacuation. Supervisors, building managers, and department heads shall ensure that all occupants are familiar with their assembly location and ways to safely exit the building before an evacuation event.

3. The State of Alabama adheres to the Life Safety Code (NFPA 101). For information on specific fire safety requirements, departments may contact University Safety for assistance.

12.2 CANDLES AND INCENSE

The burning of candles and incense is prohibited in the University's academic buildings, auxiliary buildings, residence halls or in any University housing, except in conjunction with recognized religious activities. The use of candles may be used in areas of public assembly such as dining rooms and the chapel. The use of candles may be approved in compliance with the following conditions:

1. To obtain permission for candles used for recognized religious purposes, requests must be submitted at least 72 hours in advance of the requested date to the Office University Safety. Approval will be granted for specific dates and locations only.

2. Candles must be under constant supervision and may not be left unattended while burning.

3. Candles must be of a low-flame variety and must be placed in a properly fitting candelabrum or in a sturdy, non-combustible container. Otherwise, no taper candles are allowed. Hand-held candles must be approved by University Safety.

4. For religious purposes, candles shall be lit only during the service and must be under constant supervision. Candles are never to be used if oxygen is being used in the room.

5. No polystyrene foam candle holders or candles in a table or mantle decorations are allowed. The user must evaluate the table decorations to assure the candle will not ignite them.

6. Candles shall not be placed on windowsills or other areas that are unstable or could come in contact with curtains or other hanging objects.

7. All readily combustible materials, such as drapes or curtains, must be secured at least three (3) feet away from the open flame.

8. Candles must not be used in close proximity to heat or smoke detectors or sprinkler heads in such a way that heat, or smoke might activate the device.

9. As an alternative, UL-listed electrical candles may be used.

12.3 FIRE ALARMS

Manual fire alarm stations will be used only for emergency, testing, or signaling purposes.

1. Fire alarm stations shall be unobstructed, readily accessible and located in the normal path of exit from an area.

2. All alarm systems will be under the supervision of qualified persons. These persons will cause proper tests and inspections to be made at regular intervals and will have general charge of all alterations and additions to the systems under their supervision.

3. When a fire alarm sounds for any reason, all occupants must exit the building according to the guidelines in Chapter 6, section 6.3.

12.4 FIRE EXTINGUISHERS

Fire extinguishers are provided for the protection the building structure, the occupancy hazards, and for the protection of life.

1. Extinguishers will be inspected monthly to ensure they are in their designated places, that they have not been actuated or tampered with, and to detect any obvious physical damage, corrosion, or other impairments. University Safety is responsible for effecting this policy.

2. Extinguishers removed from the premises to be recharged will be replaced by spare extinguishers during the period they are gone.

3. Notify University Safety at 256-782-8599 or safety@jsu.edu., if a fire extinguisher has been used for any reason, for immediate replacement.

4. Persons or departments found misusing fire extinguishers will be required to pay for the cost of recharging or replacing the unit.

12.5 FIREWORKS

No fireworks display will be allowed on University properties unless authorized by the appropriate University Departments, and all provisions for a safe firework display or pyrotechnic special effects are met. Random use of any fireworks of pyrotechnic special effects on JSU proprieties is prohibited.

The location for a firework display or special effects production will be considered on a case-by-case basis. Once a site has been requested for use, University Safety will inspect the location, review the company contracted to perform the fireworks display or special effects production, coordinate with the appropriate representatives from the Jacksonville City Fire Department, University Police Department, Capital Planning & Facilities, and the individual/group making the request, to determine if the fireworks display and/or special effects production can be accomplished on that site safely, and without damage to University property. If so,

approval will be granted. If not, an alternate site may be reviewed. At the time of this inspection, the actual size, style, type, and amount of fireworks will be discussed for approval.

12.6 SPECIAL FIRE EXTINGUISHING SYSTEMS

Total-flooding and hood systems will be designed, installed, tested, and maintained in accordance with the applicable NFPA codes.

1. These systems will always be maintained in full operating condition.

2. All specialized extinguishing systems including alarms, shutdown, and other associated equipment will be thoroughly inspected and checked for proper operation as required by law. University Police Department and University Safety will coordinate this activity.

12.7 SPRINKLER SYSTEMS

1. Sprinkler heads will not be painted. Any sprinkler heads which have been painted, except for factory applied coatings applied for identification of temperature ratings, will be replaced with new approved sprinklers.

2. Sprinkler heads must not be used to hang decorations or any other object.

3. Clearance of at least 18 inches shall be maintained between sprinkler deflectors and top of storage to reduce the possibility of obstructing the distribution of water. This distance may be increased if deemed necessary by University Safety.

4. JSU Police Department will have each system pressure-tested on a periodic basis at times that will cause the least disruption of normal activity.

12.8STANDPIPES, HOSES AND HYDRANTS

1. These fire systems are to be used only by the City of Jacksonville Fire Department.

2. Hose outlets will be within easy reach of a person standing on the floor and in no case should be over six feet from the floor. Hose stations will be located conspicuously within the immediate area and not be obstructed.

3. A hose valve will be provided at each standpipe outlet for attachment of hose.

CHAPTER 13 – *ELECTRICAL SAFETY*

13.1 INTRODUCTION

Laboratory employees should be trained to understand the specific hazards associated with electrical energy. Employees who need access to operate circuit breakers and fused switches in electrical panels may require additional training to be designated by their supervisor as qualified for the task.

One of the most effective safeguarding approaches in use today is the lockout/tagout system. This method was especially designed to protect against the unexpected startup of a machine or piece of equipment that is supposed to be turned off.

1. Employees shall adhere to the following electrical safety standards while working on or around electrical equipment:
    a. Keep hands and feet dry (includes shoes and gloves). Shoes must be worn (rubber soled shoes are preferable).
    b. Remove rings, watches, and other jewelry that may conduct current.
    c. Do not touch electrical appliances when working at a sink.
    d. Know the location of all power plugs and off-switches on all equipment off-switches
    e. All electronic equipment devices are potentially lethal.
    f. Report all shocks, arcs, and defective equipment to your supervisor.
    g. Only qualified electricians should do repairs.
    h. All electronic equipment devices are potentially lethal. Report all shocks, arcs, and defective equipment to your supervisor. Only qualified electricians should do repairs.

2. The electrical supervisor shall determine the methods of grounding all applicable parts and circuitry.
    a. All plug-in fixed and portable electrical tools shall be grounded at plug.
    b. Ground all exposed non-current carrying metal parts of fixed equipment, these can become energized under abnormal conditions.
    c. Live parts of electric equipment operating at 50 volts or more will be guarded against accidental contact by approved cabinets or other forms of approved enclosures or by any of the following means:
        i. By location in a room, vault or similar enclosure that is accessible only to qualified persons.
        ii. By suitable permanent, substantial partitions or platforms so arranged that only qualified persons have access to the space within reach of the live parts.

3. Entrances to rooms and other guarded locations containing exposed live parts will be marked with conspicuous warning signs forbidding unqualified persons to enter.

4. The following general safety rules apply to all maintenance of equipment
    a. Only qualified persons shall work on energized equipment and/or wiring.
    b. No employee shall work in such proximity to any part of an electric power circuit unless the employee is protected against electric shock by deenergizing the circuit and grounding it or by guarding it by effective insulation or other means.
    c. Suitable protective equipment or devices shall be provided and used on or near energized equipment for the protection of employees where there is a recognized hazard of electrical shock

or burns. In lieu of protective equipment, barricades may be used to provide protection from exposed energized equipment.

d. Equipment or circuits that are de-energized shall be rendered inoperative and have tags attached at all points where such equipment or circuits can be energized.
e. All reasonable means shall be provided to bar unauthorized persons and/or equipment from the immediate vicinity of the work in progress.
f. All switches, circuit breakers, fuses and other control and protective devices will be so located or arranged that they may be safely operated, removed, or repaired.
g. Disconnecting devices shall be marked clearly with durable labels and/or ink.
h. In case of an accident:
i. Break connections to victim by turning off the power or by using a non-conducting object to separate victim and source.
    i. Call University Police at 256-782-5050.
    ii. Perform CPR as quickly as possible, if trained. If trained, extinguish electrical fires with an appropriate fire extinguisher.

13.2 FLEXIBLE CORDS

1. The campus electrician/electrical supervisor will determine the need for flexible cords. For general details see Chapter 7, “Flexible Electrical Cords.”.

2. Flexible cords will not be used:
    a. As a substitute for fixed wiring,
    b. Through walls, ceilings, floors, doorways, or windows,
    c. Attached to building surfaces.
    d. Concealed behind building walls, ceilings, or floors.

3. Splices to flexible cords are discouraged and only permitted with the authorization of the electrical supervisor.

13.3 GROUND-FAULT CIRCUIT PROTECTION

A ground fault interrupter (GFI), also called a ground fault circuit interrupter (GFCI), can detect the flow of current to the ground and open the circuit, thereby interrupting the flow of current. When the current flow in the hot wire is greater than the current flow in the neutral wire, a ground fault has occurred. The GFI provides a safety measure for the person who becomes a part of the ground fault circuit. The GFI cannot interrupt current passing between two circuits or between the hot and neutral wires of a three-wire circuit. To ensure safety, equipment must be grounded as well as protected by a GFI.

1. Ground-fault circuit interrupters (GFCI) will be used when portable electrical equipment is used in outdoor, wet, or other hazardous locations; this includes but is not limited to locations within 6 inches of the floor surface.

2. All 120-volt, AC, single phase, 15-and 20-ampere receptacle outlets near, wet, or other hazardous locations, will have approved ground-fault circuit interrupters.

13.4 WORKING SPACE AROUND ELECTRICAL EQUIPMENT REQUIREMENTS

1. Sufficient access and working space will be provided and maintained around all electrical equipment to permit ready and safe operation and maintenance of such equipment.

2. Working space required by this Section will not be used for storage.

3. At least one entrance of sufficient area will be provided to give access to the working space around electronic equipment.

4. Adequate illumination will be provided for all working spaces around electrical equipment. The light outlets will be so arranged that persons changing lamps, or making repairs, on the lighting system will not be endangered by live parts or other equipment.

The minimum headroom of working spaces around switchboards, panel boards and control centers that require manual operation or where there are live parts exposed at any time will be 6-1/4 feet.

CHAPTER 14 – *ENVIRONMENTAL CONTROLS*

14.1 INTRODUCTION

Temperature control is the most basic way to eliminate environmental hazards. Thermostats should be set between 65° and 78° Fahrenheit for employee comfort and to help ensure that the relative humidity levels recommended by American Conference of Governmental Industrial Hygienists (ACGIH) are maintained below 60%. Relative humidity between 40-50% is considered ideal. The HVAC Supervisor may deviate from this norm when equipment modifications are necessary.

14.2 VENTILATION

1. The general atmosphere in all rooms occupied by employees and students will be ventilated by natural or mechanical ventilation.

2. The intake for the air supply shall be so located as to prevent the intake of contaminants.

3. Whenever harmful dusts, fumes, mists, vapors, or gases exist or are produced, and prevention or elimination of such hazards is not practicable, such hazards will be controlled by the application of exhaust ventilation or other effective mechanical means.

4. Such exhaust systems shall be so designed that dusts, fumes, mists, vapors, or gases are not drawn through the work area of employees.

5. The exhaust system will be in operation continually from the time that airborne hazards are created until the hazard is no longer possible.

6. The air outlet from every dust separator, and the dusts, fumes, mists, vapors, or gases collected by an exhaust system will discharge to the outside.

14.3 NOISE CONTROL

The fundamental hazard associated with excessive noise is hearing loss. Exposure to excessive noise levels - in excessive of 90 dBA - for an extended period of time can damage the inner ear and reduce the ability to hear different frequencies. Steps must be taken to control noise at the source.

1. Departments should keep noise levels as low as possible and seek the advice from the Office of University Safety on all questions regarding noise.

2. Feasible administrative or engineering controls, based on the recommendation of University Safety, shall be used as the primary method of handling hazardous noise. If such controls fail to reduce sound levels, or are impractical, personal protective equipment shall be provided.

3. University Safety may institute a hearing conservation program, based on the noise exposure in certain locations or with certain tasks. The principles for this program are found in OSHA's Occupational Noise Standard (29 CFR 1910.95).

14.4 ILLUMINATION

1. Illumination that is adequate and suitable to provide a reasonably safe campus environment shall be provided in all walking, working and service areas.

2. There shall be a sufficient quantity of illumination in all workplaces.

14.5 COLD STORAGE ROOMS

A cold storage space is a room used for the preservation of substances by controlled temperatures.

1. Every cold storage room will have at least one door that can be opened from the inside.

2. Doors may be padlocked or otherwise securely locked from the outside if the room is equipped with an inside release mechanism which will release the latch and open the door when the latch is padlocked. Exceptions will be subject to approval by the office of University Safety.

3. Illumination will be provided in the room by either a continuously lit light fixture or by switch-control. If a switch-control light is used, there shall be a switch located inside the room near the door, which shall be visible in the dark.

CHAPTER 15 –*WORKING SURFACES*

15.1 FLOORS

1. All working surfaces shall be kept in good repair, clean and orderly. Grease, water, or other slippery substances shall not be allowed to accumulate on these surfaces. If these substances are spilled on working surfaces, they will be cleaned up at once.

2. Electrical wiring and cables must not cross aisles or work area floor space without approved type ramps or protection for the wiring.

3. Mats, gratings, or other non-slip materials shall be used in wet process areas and other locations, as necessary.

4. Highly polished floors may present slipping hazards. To minimize this danger, only approved water emulsion wax of the non-slip type should be used.

5. Carpeting shall be laid smoothly; loose or torn floor coverings shall be repaired or removed promptly. Rugs not securely fastened to the floor shall have a rubberized non-slip backing or shall be laid over pads made of rubber or other non-slip material.

6. Permanent roadways, walkways and material storage areas in outside yards shall be maintained free of dangerous depressions, obstructions, and debris.

15.2 FLOOR OPENINGS

1. Openings in floors shall be guarded by hinged covers or standard railings on all exposed sides. When the cover is not in place, a removable standard railing or barricade shall protect it.

2. Floor opening covers should be made of solid construction. Grills or slatted covers may be used with openings 1 inch in width or narrower. Covers should have a non-slip surface and be set flush with the floor. If they cannot be set flush with the floor, they shall not project more than 1 inch above the floor level.

3. Unused portions of service pits will be either covered or protected by guardrails.

15.3 LADDERS

1. Straight ladders, step ladders, library-type ladders, safety stools and other climbing equipment must be made available as necessary and be maintained in a safe, operable condition. Personnel must not be permitted to climb onto cabinets, chairs, and other furnishings.

2. Ladders that are broken, weak or with missing rungs will be tagged and removed from service. The tag shall read “DANGER. DO NOT USE.”

3. Ladders will not be used for weights that exceed their recommended maximum weight capacity. Long ladders will be braced to prevent undue deflection (bending).

4. Portable ladders shall be erected at a pitch of 75 1/2 - degrees for maximum balance and strength. A simple rule for setting up a ladder at the proper angle is to place the base at a distance of 1/4 of the working length (the length along the ladder between the floor and the top support) of the ladder.

5. Unless suitable handholds are provided, the side rails of all ladders shall extend at least 3 feet above the upper landing.

6. Ladders, other than stepladders, shall be secured against movement.

7. Ladders shall not be painted.

8. The latching of ladders together to increase the length of the ladder is prohibited.

9. Portable metal ladders shall not be used in the vicinity of electrical circuits, where they may come in contact with the circuits. Portable metal ladders shall be legibly marked with signs reading "CAUTION - DO NOT USE AROUND ELECTRICAL EQUIPMENT," or equivalent wording.

10. No one shall be permitted to stand and work on the top 3 rungs or cleats of a straight or extension ladder unless there are members of the structure that provide a firm handhold or the worker is protected by a safety belt. The same applies to the top two rungs of an A-frame ladder. No one shall be permitted to stand on the top of an A-frame ladder.

11. Ladders shall not be placed in passageways, doorways, driveways, or any location where they may be displaced, unless protected by barricades or guards.

12. Ladders should be stored in such a manner as to provide ease of access and to prevent accidents or injuries when withdrawing a ladder for use.
    a. Wood ladders, when not in use, should be stored in a location where they will not be exposed to the elements, but where there is good ventilation.
    b. Ladders stored in a horizontal position should be supported at a sufficient number of points to avoid sagging and warping.

13. The following rules apply to stepladders:
    a. Stepladders longer than 14 feet shall not be used.
    b. All locking devices must be engaged before using.
    c. Stepladders shall not be leaned against walls, doors, or other structures.

14. When ascending or descending, the user should face the ladder and use both hands for balance.

15.4 ROOFS

1. Storage of any kind shall not be permitted on roofs.

2. Guardrails shall be required at locations where there is a routine need for any employee to approach within 6 feet of the edge of the roof. When intermittent work is being done, lifelines, safety belts or equivalent protection may be provided in lieu of guardrails.

3. Roof and ceiling trapdoors shall be constructed and maintained so that they can be easily opened and closed. Roof trapdoors shall be equipped with a light padlock especially approved for that purpose.

4. Skylight screens shall be of such construction and mounting that they can withstand a load of at least 200 pounds applied perpendicularly at any one area on the screen.

15.5 SCAFFOLDS

1. Scaffolds shall be provided for all work that cannot be done safely by employees standing on permanent or solid construction (at least 20 inches wide), except where such work can be safely done from ladders.

2. Work of a limited nature and of short duration may be permitted when the permanent or solid construction is less than 20 inches in width and does not exceed 1 story or 15 feet in height.

3. Scaffolds may be constructed of suitable materials such as steel, wood, or aluminum elements of known strength characteristics.

4. Scaffolds and their components shall be capable of supporting at least 4 times the maximum intended load.

5. Scaffolds shall not be overloaded by personnel, tools, and material.

6. The work level platform of scaffolds shall be for the full width of the scaffold, except for necessary openings. Work platforms shall be secured in place. Follow the manufacturer's safety instructions or call the Office of University Safety for counsel.

7. When using platform planks other than those designated by the manufacturer, they shall be at least 2 by 10 inches, and of such length that they overlap the ledgers at each end by at least 6 inches. A plank shall not overlap an unsupported end of another plank.

8. A climbing ladder or stairway shall be provided for proper access and egress to all scaffolds and so located that its use will not have a tendency to tip the scaffold. A landing platform shall be provided at intervals not exceeding 20 feet.

9. All scaffold work levels 30 inches or higher above the ground or floor shall have guardrail protection that meets the requirements of Chapter 8.

10. All scaffold work levels six (6) feet or higher above the ground or floor shall have a toe board at locations where persons may be near the scaffold.

11. Unless recommended for such use by the manufacturer, no work platform shall be used on an inclined surface.

12. The maximum work level height for rolling scaffolds shall not exceed three (3) times the least base dimension directly below the platform. Where the unit does not meet this requirement, outrigger frames shall be employed to achieve this least base dimension, or provisions shall be made to secure or brace the unit against tipping. The minimum platform width for any work level shall not be less than 20 inches for mobile scaffolds.

13. Wheels or casters of rolling scaffolds shall be provided with an effective locking device and kept locked when workers are climbing or working on the scaffold.

14. Employees shall not be on the scaffold while the scaffold is being moved.

CHAPTER 16 – *SANITATION*

16.1 FOOD SANITATION

1. Food and drink for human consumption must not be stored or consumed in laboratories or shops where there is possibility of contamination by toxic material or other substances injurious to health.

2. Users will keep departmental kitchen areas and appliances clean; refrigerators will be purged of old food items monthly.

3. Persons who eat in a shared office space must dispose of food items in a receptacle outside of the office area or tightly bag the material to prevent odors and indoor air quality complaints.

4. All student and other recognized organizations selling food to the public on campus must be approved by Auxiliary Services and are required to meet the State of Alabama Public Health requirements and those guidelines published by Student Activities.

5. No live animal will be kept or allowed in any room where food or beverage is prepared, stored, kept, or served. This does not apply to service and emotional support animals.

6. Vending machines which dispense food and beverages will always be kept in a sanitary condition. Food items will be packaged or stored in protective containers.

7. All persons preparing, serving, or handling food will wear clean, washable garments or other clean uniforms, and will always keep their hands clean while engaged in handling food, beverage, or utensils. All such persons will wash their hands and arms with soap or detergent and warm water before commencing work, after using toilet facilities, before returning to work and at such times as necessary to prevent contamination of food. Wearing of fingernail polish will not be allowed for food handlers. To prevent harborage of bacteria, food handlers will be allowed to wear only one ring.

16.2 INSECT, RODENT AND VERMIN CONTROL

1. Every enclosed area on campus will be constructed, equipped, and maintained in such a manner as to prevent the entrance or harborage of insects, rodents, and vermin of any kind.

2. Effective measures intended to minimize the presence of rodents, flies, cockroaches, and other insects on the premises shall be utilized. The premises shall be kept in such condition as to prevent the harborage or feeding of insects or rodents.

3. Whenever necessary to control insects, rodents, or vermin, fumigation or spraying of insecticide will be performed by certified pesticide handlers. Preparation of areas needing treatment will be done prior to any spraying or fumigation of insecticides.

16.3 RESTROOMS

1. Restroom facilities will be kept clean, maintained in good working order and will always be accessible when the building is occupied.

2. Each restroom will be equipped with an adequate number of toilet facilities in accordance with building code and ADA requirements.

3. Each restroom will contain an adequate number of washing facilities for maintaining personal cleanliness. These facilities will be accessible, in a sanitary condition, and be maintained in good working order. Restroom washing facilities will be equipped as described below:
    a. Each washing facility will be provided with hot and cold running water, or with tepid running water, and with suitable cleansing agents.
    b. Except for residence halls, clean, individual hand towels, or sectioned towels, of paper or warm-air blowers, will be provided. Warm-air blowers will provide warm air at a minimum temperature of 90 F.
    c. Receptacles will be provided for the disposal of used paper towels.

4. Where showering is required:
    a. Separate shower rooms with hot and cold water will be provided for males and females, as necessary. Liquid soap or other appropriate cleansing agents convenient to the shower will be provided.
    b. This does not include recreational/sporting facilities unless approved by that department.
    c. All persons who use showers should be provided with individual clean towels (work-related only).

5. Whenever employees are required to change from street clothes into protective clothing, change rooms equipped with storage facilities for street clothes and separate storage facilities for the protective clothing will be provided.

16.4 WASTE DISPOSAL

1. Any receptacle used for solid or liquid waste or refuse will be constructed so that it does not leak and may be thoroughly cleaned and maintained in a sanitary condition.

2. Wastebaskets and waste containers must be constructed of easily cleanable, fire-resistant type materials and will be kept in a sanitary condition.

3. All sweepings, solid or liquid waste and refuse; will be removed in such a manner as to avoid creating a menace to health and as often as necessary or appropriate to maintain the University in a sanitary condition.

4. Receptacles containing food waste will be emptied not less than once each working day and will be maintained in a clean and sanitary state. They will be provided with solid, tight-fitting covers unless sanitary conditions can be maintained without the use of covers.

16.5 WATER SUPPLY

1. Potable water in adequate supply will be provided in all places of employment for drinking, washing, and bathing.

2. All sources of drinking water will be maintained in a clean and sanitary condition. Drinking fountains and potable drinking dispensers will not be located in rooms with toilet facilities.

3. All water supplied to the University is purchased from the City of Jacksonville and is tested on a regular basis by the City.

4. Non-potable water will not be used for drinking, washing, swimming, or bathing.

CHAPTER 17 – *HOUSEKEEPING AND STORAGE*

17.1 HOUSEKEEPING

The following housekeeping rules apply:

1. All places of employment and study will be kept clean and orderly and in a sanitary condition. The floor of each area will be maintained as clean and as dry as possible.

2. Any material spilled on the floor that could cause an accident must be cleaned up immediately.

3. During the course of work, all debris will be kept reasonably cleared from work areas, and all waste will be disposed of at intervals determined by the rate of the accumulation and the capacity of the container. Always use containers supplied for this purpose.

17.2 GENERAL STORAGE RULES

1. Material, wherever stored, will not create a hazard. It will be limited in height and will be piled, stacked, or racked in a manner designed to prevent it from tipping, falling, collapsing, rolling, or spreading. Racks, bins, planks, blocks, and sheets will be used where necessary to make the piles stable.

2. Heavy or awkward items should always be stored near the bottom or in cabinets as falling heavy items are a potential hazard to personnel.

3. Do not allow equipment or storage to encroach within 30 inches (preferably 42") of electrical panels. These panels contain the emergency switches for equipment and need to be readily accessible.

4. Have Facilities & Grounds secure storage shelving, cabinets and other items that may accidentally tip over or are subject to movement.

17.3 INDOOR STORAGE

1. Storage will not obstruct or adversely affect means of exit (see Chapter11 – Buildings).

2. State fire laws do not allow the storage of materials that may generate heat or emit smoke in corridors and halls. For this reason, it is campus policy that there are no lockers, cabinets, refrigerators, storage materials or extension of office or laboratory facilities or functions into any corridor space of a campus building.

3. All materials will be stored, handled, and piled with due regard to their fire characteristics.

4. Clearance will be maintained around lights and heating units to prevent ignition of combustible materials.

5. Stacked materials will have a minimum clearance of eighteen (18) inches between the top of the stack and the sprinkler system piping and deflectors.

6. In buildings without installed sprinkler systems, the material stack height shall not exceed fifteen (15) feet and will have a minimum of thirty-six (36) inches clearance between the top of the stacks and joists, rafters, or roof trusses.

7. The maximum weight of materials stored on building floors or load carrying platforms will not exceed their safe carrying capacity.

8. In warehouse-type storage areas, aisles and passageways for one-way forklift traffic will be not less than the width of the widest vehicle or load plus 3 feet. For two-way forklift traffic the minimum aisle width will not be less than twice the width of the widest vehicles or loads plus 3 feet.

17.4 LOOSE MATERIAL STORAGE

1. Materials stored against walls or partitions will not be stored to a height that will endanger the safety of passers-by or the stability of such walls and partitions.

2. No employees will be permitted to work on or over loose material, until they have been instructed in the hazards involved, and precautions have been taken to prevent cave-ins.

3. No overhanging will be permitted at any time.

17.5 OUTDOOR STORAGE

1. Combustible materials will be piled with due regard to the stability of piles and not higher than 20 feet.

2. Driveways around combustible storage piles will be at least 15 feet wide and be maintained free from accumulation of materials.

3. The entire storage site will be kept free from accumulation of unnecessary combustible materials. Weeds and grass shall be kept down, and a regular procedure provided for the periodic cleanup of the entire area.

4. Storage material will be kept in orderly piles. No combustible material will be stored outdoors within 10 feet of a building or structure.

5. When practical, portable fire extinguishing equipment, suitable for the fire hazard involved, will be provided at convenient, conspicuously accessible locations in the storage yard area.

CHAPTER 18 – *CONTAMINANTS*

18.1 INTRODUCTION

Exposures by inhalation, ingestion, skin absorption, or contact with any hazardous material or substance shall be avoided or protective equipment shall be provided and used.

Feasible administrative or engineering controls such as work rotation, time limitations, process, or local exhaust ventilation and/or process isolation, must first be determined and implemented in all cases. Whenever engineering and administrative controls fail to achieve full compliance, protective equipment, alone or in addition to other measures, is to be used as the method of protecting the employees. Such protection must be according to the standards outlined in Chapter 8, "Personal Protective Equipment (PPE)."

When local exhaust ventilation is used, it shall be designed and operated to prevent harmful exposure. The exhaust system will be designed, constructed, installed, inspected, tested, maintained, and operated as to ensure the required protection by maintaining a volume and velocity of exhaust air sufficient to gather the harmful material and to convey them to suitable points of safe disposal.

18.2 AIRBORNE CONTAMINANTS

The most common types of airborne contaminates are dusts, fumes, smoke, aerosols, mists, gases, and vapors. Each type of contaminate has a specific definition and established recommended exposure thresholds that must be understood in order to develop effective safety and health measures to protect against it. In protecting workers from the hazards of airborne contaminants, it is important to know the permissible levels of exposure for a given contaminant and to continually monitor the level of contaminants using accepted measurement practices and technologies.

1. Exposure thresholds are often reported in one of the following;
    a. Time-weighted average (TWA) is the average concentration of a given substance to which employees may be safely exposed over an eight-hour workday or a forty-hour work week.
    b. Short-term exposure limit (STEL) is the maximum concentration of a given substance to which employees may be safely exposed for up to fifteen minutes without suffering any adverse effects.
    c. Exposure ceiling refers to the concentration level of a given substance that should not be exceeded at any point during an exposure period.

2. Since exposure threshold data are prone to frequent change, actual values for given chemicals are not presented in this manual. All questions on current concentration limits or substances are to be referred to the Office of University Safety. When appropriate, necessary sampling with instruments will be performed by University Safety personnel.

18.3 ASBESTOS

1. Asbestos must be removed when it poses a threat to release airborne asbestos fibers and it cannot be reliably repaired or isolated. Such "must remove" mandates are to be determined by University Safety.

2. Where there is no compelling mandate to remove asbestos, decisions to remove, rather than repair, damaged friable asbestos materials should be based on degree of risk to facility occupants, use of the facility, feasibility of repair, frequency of repair, and cost-effectiveness.

3. When safety and budgetary allowances permit, complete removal of Asbestos Containing Material (ACM) is desirable and must be included in planning prior to renovation projects.

4. Personnel that may come into contact with asbestos while performing their duties are required to attend a 2-Hour Asbestos Awareness Training class annually. All newly hired Maintenance and Custodial Personnel must be trained within 90 days of being hired. University Safety will conduct the Awareness Training.

5. All Maintenance personnel are required to obtain permission from University Safety before disturbing any building materials that may be ACM. It is to be assumed that any building material is asbestos containing unless identified as non-asbestos containing material by University Safety.

6. ACM is to be removed by a licensed abatement contractor prior to minor construction, repair, or renovation.

7. Only qualified (certified and/or licensed) personnel are authorized to collect, encapsulate, abate, remove, disturb, or dispose of ACM. These activities involving ACM must be done in accordance with applicable federal and state laws (40 CFR 763 and 29 CFR 1910.1101).

8. Some ACM surveys, projects, or repairs may require prompt completion. Therefore, a local contractor, qualified and licensed to conduct asbestos surveys and do repair or removal work will be retained for such services.

9. The Office of University Safety shall be contacted whenever asbestos is found or suspected as part of any building material on campus, such as ceilings, floor tiles, pipe insulation, etc.

10. The Office of University Safety is to be contacted immediately if ACM is found disturbed, or if it is suspected that non-qualified workers are disturbing or conducting asbestos related activities, or it is observed that persons disturbing ACM are not taking appropriate safety precautions to protect themselves, students, faculty, or staff of the University.

11. University Safety is responsible for notifying the State of Alabama and, as necessary, the Board of Trustees of all applicable ACM-removal projects.

CHAPTER 19 – *HAZARDOUS MATERIALS*

19.1 INTRODUCTION

Persons who are planning to transport or use ionizing or non-ionizing sources of radiation should contact University Safety for information on state licensing, operational procedures, and monitoring requirements.

People are exposed to a variety of substances every day in the home and at work. Most substances with which we interact are not dangerous in small amounts or limited exposure. However, high levels of exposure to certain substances in high concentrations can be dangerous. Levels of exposure and concentration, as well as how we interact with substances, help to determine the degree of hazard. The more we do to eliminate our exposure to these materials whether at home or work, the healthier we will be long into the future.

19.2 ACIDS AND ALKALIS

The most dangerous chemical compounds and mixtures used on campus are acidic or alkaline (corrosive).

1. In general acids and alkalis are similar in their injurious properties in that they either may cause:
    a. Chemical burn by direct contact with the skin or eyes or indirectly through the clothing.
    b. Intoxication or suffocation by inhalation of the fumes. The fumes of some compounds are toxic or poisonous while others will displace air thereby producing a suffocating atmosphere.
    c. Poisoning, when taken internally.
    d. Fire and explosion because of their instability under adverse storage conditions. Also, some acids are strong oxidizing agents that can generate ignition temperatures upon contact with organic materials and other chemicals.

2. Precautions: The following general precautions are to be observed in operations involving the handling of acids and alkalis.
    a. Signs should be posted near established operations, warning others of the principal hazards of the operation of the chemicals being used. All containers will be plainly marked with an appropriate warning.
    b. Safety showers and eye fountains will be provided near work areas. Showers will have deluge-type heads and quick-opening or automatic valves. Eye fountains will be capable of simultaneously washing both eyes. Eyewash stations shall be inspected at least once per week. Showers shall be inspected at least once per month.
    c. Where injurious fumes are habitually generated by a fixed installation, permanent exhaust ventilation will be provided. Temporary fuming conditions may be ventilated by portable equipment, or personnel should wear respirators approved for the type and concentrations of the fumes encountered in accordance with the written Respiratory Protection Program in Appendix I of this Manual.
    d. Unless the results of a reaction are definitely known, acids and alkalis will not be mixed with other chemicals. The diluting of acids with water can generate considerable heat. Acid should always be added to water, not water to acid.

3. Protective Clothing: Workers who handle acids and alkalis shall be provided, depending on the severity of exposure, with the following clothing:
    a. Chemically resistant rubber or plastic gloves.

b. Rubber or plastic chemical goggles. Where complete face protection is required, plastic face shields should be worn in addition to the chemical goggles.
c. Chemically resistant rubber boots, overshoes or shoes with resistant soles depending on the nature of the exposure.
d. Chemically resistant aprons.

4. Respiratory Protection: Since air purifying respirators are approved for maximum atmospheric concentration of only 2 to 3 percent of the contaminant, use is not recommended unless the fume concentration is known and there will be sufficient oxygen to support life (greater than 19.5% by volume). Self-contained breathing apparati, must be worn by trained individuals, when the oxygen content or the contaminant concentration is not known.

19.3 CHEMICAL HANDLING AND FIRST AID

When working with chemicals, all people should exercise good personal hygiene by washing their hands thoroughly before eating or drinking. Listed in this section are the safety procedures to be followed when using or handling the various chemicals that are in most common usage on campus and not just laboratories. Because of the potential danger, additional procedures are shown for acids and alkalis, oxidizers, and solvents. Safety procedures for chemicals not listed may be obtained from the Office of University Safety.

Also included in this section are first-aid procedures to be used in chemical burn emergencies. Basic general first-aid procedures are shown below, while specific instructions are listed on the chemical label or found on the material safety data sheet provided by the manufacturer.

1. In general, the severity of chemical burns depends upon the following factors:
   a. Corrosiveness of the chemical.
   b. Concentration of the chemical.
   c. Temperature of the chemical or its solution.
   d. Duration and surface area of the contact.

2. The first three factors are set by the properties of the chemical itself. The fourth factor, duration and surface area of the contact can be controlled by proper prompt first-aid treatment without delay.

3. The need for immediate and thorough washing with water cannot be over-emphasized. This is the only method for limiting the severity of the burn; the loss of only a few seconds can be vital.

4. If a person's clothing becomes soaked with a corrosive chemical, burning will continue until the clothing is removed. With chemicals that produce heat upon contact with water, it is particularly important to remove contaminated clothing quickly before irrigation is begun. Delay of irrigation can be kept to a minimum by inserting a hose underneath the clothing and starting to flush the burned area with running water while the clothing is being removed.

5. Chemicals act very rapidly on eyes and may cause blindness unless care is given immediately. Therefore, the eye should be irrigated with water immediately, and

6. IRRIGATION SHOULD CONTINUE UNTIL MEDICAL HELP ARRIVES.

7. Irrigation can be accomplished using an eye wash fountain (preferably), shower bath, hose, drinking fountain or any other type of water container. If you can lift the eyelids while irrigating, do so!

8. If a hose is employed, a slow stream of water should be used. A fast stream of water may injure the eye and drive the chemical back under the eyelids

9. Persons exposed to acid or alkali fumes should be removed to an uncontaminated area and kept under observation until the probability of developing complications or delayed pulmonary reaction is no longer present.

10. When acids or alkalis are taken internally, immediately contact Health Center at 256-782-5310 or the Poison Control Center (800-222-1222) for appropriate antidotes. Make every effort to find out exactly what the chemical constituents of the solution are and its concentrations. If possible, provide the Safety Data Sheet (SDS). This information may be useful for medical treatment.

19.4 COMPRESSED GAS

1. Cylinders will be stored in a well-protected, well-ventilated, dry location, at least 20 feet from highly combustible materials.

2. Cylinders may be stored in the open, but in such cases, protection is needed against the weather and ground moisture; and should be shaded against direct rays of sunlight. Bulk storage is to be in approved rooms or outside enclosures. Bulk storage cylinders should be chained, and security measures taken to prevent tampering and loss.

3. Do not lift cylinders by the valve cap.

4. When opening a valve cap, keep your hands on the side of the cap – never on top.

5. Do not store empty cylinders with full ones and do not place cylinders where they may become part of an electrical circuit.

6. All gas cylinders in service or storage, empty or full, will be securely held upright in substantial racks or secured to other rigid structures so that they will not fall or be knocked over. During storage, cylinder caps should be in place.

7. All cylinders are to be considered full unless properly identified as empty. Empty cylinders should be returned to the supplier and not be permitted to accumulate. To prevent contamination and even explosive mixtures in cylinders, always leave at least 25 PSI minimum pressure in all "empty" cylinders. Do not leave an empty cylinder attached to a pressurized system.

8. Regulators shall be compatible with the gas. Remove regulators when the cylinder is not in use.

9. Portable service gas cylinders will be conveyed by suitable hand trucks and dollies; to which, they must be securely fastened. During movement, cylinder caps should be in place. Do not “walk” cylinders. Do not roll cylinders.

10. Compressed gas cylinders will be legibly marked, for the purpose of identifying the gas content, with either the chemical or the trade name of the gas. Such marking will be by means of labeling and shall not be readily removable. The marking will be placed on the shoulder of the cylinder.

11. Cylinders should not be accepted unless the cylinder contents are clearly labeled. Do not accept cylinders which are rusted or damaged, or do not have a valve protection cap.

12. Oxygen cylinders shall never be stored near highly combustible materials, or other fuel gas cylinders, nor near any other substances likely to cause or accelerate fire.

13. Systems used for other gases must never be used for oxygen.

14. No attempt will ever be made to transfer gases from one cylinder to another, to refill cylinders or to mix gases in a cylinder.

15. Never force a gas cylinder valve. If the wheel or the small wrench provided cannot open the valve, the cylinder should be returned.

16. Use Compressed Gas Association (CGA) approved fittings and components.

17. Each department will determine that compressed gas cylinders under their control are in a safe condition to the extent that this can be determined by visual and other inspection. Cylinders with bulges, rust, or defects will be removed from service, tagged, and moved outdoors until the nature of the defect is determined.

18. Compressed gas cylinders will have pressure relief devices installed and maintained in accordance with the requirements of the Compressed Gas Association. Types of safety relief devices include frangible discs, fusible plugs, and safety relief valves. Never tamper with cylinder safety devices.

19. Piping used with compressed gases will be steel, wrought iron, brass or copper pipe, or seamless copper, brass, or stainless-steel tubing. Piping systems will be protected by pressure relief devices set to function at not more than the design pressure of the systems and discharging upwards to a safe location.

20. Flashback arrestors shall be installed on all acetylene torches.

19.5 FLAMMABLE LIQUIDS

1. Limit the quantities at any one location to those actually necessary. Do not store more than 55 gallons total of flammable liquids in one area unless approved by University Safety.

2. Use only approved containers (e.g. safety cans or metal drums) for all transportation and handling.

3. Label every container used for flammable liquids with the name of the material and the words "Danger - Flammable - Keep away from heat, sparks and open flames - Keep closed when not in use."

4. Flammable liquids, unless authorized by University Safety, must be stored in a safety cabinet of double-wall steel with a three-point locking door and a two-inch sill at the bottom. Label cabinets “Flammable – Keep Fire Away”.

5. Prohibit smoking and eliminate other possible ignition sources wherever flammable liquids are stored or used.

6. Avoid sparks from static charges generated by pouring; connect dispensing and receiving containers (if metal) by a suitable electrical conductor. Use non-sparking tools around metal drums and containers. Ground containers whenever practical.

7. Provide fire barriers, fire alarms and fire equipment, as appropriate, at all locations of storage and use.

8. Prevent accumulation of vapors by careful handling and by providing adequate ventilation.

9. All ether storage containers will be labeled with the date of purchase.

10. Isopropyl ether and anhydrous ethers will be kept for no longer than six months and other ethers for no longer than one year. This storage may be extended for an additional six months if the user can prove no peroxide formation has occurred. Contact University Safety for assistance in extending storage approval.

11. Detailed information and recommendations for specific situations may be obtained from the Office of University Safety.

19.6 FLAMMABLE VAPORS

1. Ventilation will be sufficient so that under normal operating conditions concentrations of flammable vapors of gases in buildings, rooms or similarly enclosed places will not exceed 20 percent of the lower explosive limit for such vapors.

2. No source of ignition shall be permitted in any location, indoors or outdoors, where the concentration of the flammable gases or vapors exceeds or may reasonably be expected to exceed 20 percent of the lower explosive limit in the working atmosphere. Tests will be made to ascertain that this limit is not exceeded before a source of ignition is introduced into such locations, and such tests shall be repeated frequently.

Smoking is forbidden in any location where flammable vapor is present.

19.7 MERCURY

1. Mercury shall be kept in sturdy, tightly closed, and clearly labeled containers. Mercury shall never be heated in uncovered containers unless the immediate area is well ventilated.

2. Spills of mercury should be reported to University Safety immediately. Isolate the spill area. A mercury clean-up spill kit should be available anywhere that mercury is in use. The office of University Safety will train personnel in clean-up of mercury spills.

19.8 OXIDIZERS

1. Chlorates, perchlorates, peroxides, and other oxidizing agents shall be separated in storage from flammable or combustible materials and from mineral acids. Separation may be by distance or by barrier and shall be appropriate to the quantities and natures of the substances.

2. If oxidizing agents are spilled on wooden benches or other combustible material, the contaminated area or material shall be swept, washed, or otherwise cleaned sufficiently so that the oxidizing material is effectively removed.

3. When oxidizing substances are mixed with flammable or combustible substances, amounts of such mixtures and materials shall be kept to the smallest practicable quantity.

4. All containers containing an oxidizing agent must be kept covered or closed and shall be plainly marked with an appropriate warning label or otherwise distinguished.

19.9 REFRIGERATORS, STORAGE OF FLAMMABLES IN

1. Flammables shall not be stored in conventional refrigerators or freezers. "Explosion-proof" refrigeration equipment shall be used for this purpose. Some conventional refrigerators and freezers may be modified to store flammables. University Safety is available to offer guidance and approval for such modification.

2. Do not store food in refrigerators/freezers that contain flammables or are intended to contain flammables.

3. Do not store oxidizing agents in refrigerators that contain flammables or are intended to contain flammables.

4. Refrigerators used for storage of flammable liquids will be labeled "Laboratory Safe," and “Not for Food” (or similar warning).

19.10 SOLVENTS

1. A large number of solvents are used on this campus, and often selected on the basis of the respective chemical properties. Many, however, are needed merely as a degreasing agent. When this is true, one of the major factors to consider in the selection of a solvent is its relative hazard potential. Two hazard ratings currently used are described as follows:
   a. *Relative Inhalation Hazard at Room Temperature*. The relative inhalation hazard is a function of a solvent's toxicity and the amount that volatilizes and thus is available for inhalation at room temperature.
   b. *Fire Hazard Rating*. This is based upon the solvent's flash point, which is defined, as the lowest temperature at which there are sufficient vapors to form a flammable mixture at the surface of the liquid. The solvents are rated according to the following schedule.

FLASH POINT	FIRE HAZARD RATING
Less than 20° F	High
20° to 80° F.	Moderate

Over 80° F.	Slight
None	Non-flammable

2. The "Relative Inhalation Hazard" does not take into account differences in temperature or manner of use. The evaporation rate is greatly increased when the liquid is heated and/or sprayed.

3. Most solvents will dissolve the oils from exposed skin. Therefore, the use of organic solvents for hand cleaning is discouraged.

4. Most solvents have a characteristic odor. However, this cannot be relied upon to give an adequate warning of hazardous exposures. In many cases the odor threshold is above the threshold of hazardous concentrations for prolonged or repeated exposures.

5. Chlorinated solvents break down to extremely volatile and toxic phosgene gas when used in the presence of intense heat or ultraviolet radiation.

6. If solvents are used in areas with inadequate ventilation or above permissible exposure limits, proper respiratory protection must be used. If solvents are used inside of closed tanks or other unventilated areas, special equipped air respirators and/or proper ventilation must be provided. All persons required to use respirators must be given a pulmonary function test (PFT) and be trained and fit tested according to the written Respiratory Protection Program in Appendix I of this Manual. Call the office of University Safety for assistance.

19.11 SPRAY PAINTING

1. Spray painting operations using flammable or combustible liquids should be separated from other areas by either construction having a fire resistance of at least 2 hours or by being in a separate building. Spray painting should be confined to properly constructed spray booths or rooms.
    a. Spray painting may be safely performed outside if the following conditions are followed:
        i. Painter remains upwind from object being painted.
        ii. Painting operation being performed in an isolated area away from buildings, vehicles, and people.
        iii. Painter wears proper eye protection and respirator if using spray gun and compressor.
        iv. Small, one-time operations only.

2. Spray booths will be constructed of steel or masonry materials with interior surfaces smooth and continuous without edges and otherwise designed to prevent pocketing of residues and facilitate cleaning. Space within a spray booth having a frontal area greater than 9 square feet should be protected with an automatic sprinkler system or have a fire curtain or metal door at the outer edge of the booth opening.

3. Electrical equipment located within 20 feet of a spraying area shall be installed and maintained in accordance with the National Electrical Code.

4. All spraying areas will be kept free from accumulations of combustible residual deposits. If there are excessive accumulations of residue in booths, ducts, duct discharge points or other spraying areas, then all spraying operations should be discontinued until conditions are corrected.

5. All spraying areas shall be provided with mechanical ventilation adequate to dilute flammable vapors below the Lower Explosive Limit.

CHAPTER 20 – *LABORATORY SAFETY*

20.1 INTRODUCTION

1. All laboratories are required to maintain a written Chemical Hygiene Plan that is unique to their laboratory and scope of work as well as maintain a current inventory of all hazardous materials used in their assigned spaces. In addition, departments are required to ensure that the following action items are assigned to their appropriate employees and complied with.

2. Housekeeping: Main aisles and exits shall be free from obstructions. Floors shall be clean and free from oil, water and other material that may cause slipping. Equipment, reagents, etc., shall be returned to their proper location immediately after use. All containers must be clearly marked and correctly labeled. Separate containers will be provided for broken glassware.

3. Inspection: Laboratory space and equipment will be inspected at random and scheduled intervals in an effort to eliminate unsafe conditions and prevent unsafe acts.

4. Horseplay: Horseplay will not be tolerated in any laboratory at any time. Running is forbidden, except in cases of emergency. Apparatus and chemicals shall never be used as playthings.

5. Emergencies: Definite procedures shall be established and visibly posted in each laboratory for the handling of such emergencies as fire, explosion, unexpected release of toxic fumes, etc.

6. Clothing: Clothing suitable for laboratory work will always be worn. Protective clothing as outlined in Chapter 8, "Personal Protective Equipment," may also be necessary. Clothing should be selected to offer the least amount of exposed skin. Mini-skirts and shorts shall be covered up with a chemically resistant lab coat or apron. Open-toe shoes shall not be worn.

7. Goggles: Students and employees working in laboratories will always be required to wear safety glasses, and protective goggles or protective face shields when there is any possibility of eye hazard.

8. Washing Hands: Laboratory participants shall wash their hands and forearms before leaving the laboratory.

9. Electrical: When using electrical equipment around sinks or other wet conditions, be sure a ground fault circuit interrupter protects the outlet. All equipment should be equipped with a grounding plug. Do not use an extension cord for equipment that is continuously plugged in.

10. Working Alone: All laboratory participants shall never conduct potentially hazardous experiments during off-hours such as nights and weekends unless there are two or more persons present. A competent person (faculty, laboratory supervisor) shall always be in the vicinity when students are in the laboratory. Responsibility should be transferred – and the students notified - before the competent person leaves the area.

11. Lab Safety Instruction: All students, graduate students, staff, and faculty should be thoroughly trained in applicable lab safety practices before they are allowed to begin any unsupervised lab work. This can best be achieved by having each instructor, at the beginning of each course, advise his/her students of

the requirements for safety apparel and accessories, the particular hazards that may be encountered and rules and procedures to prevent or minimize the hazards. Fire and accident first aid procedures, to include location and use of fire extinguishers and safety showers, should be reviewed.

12. Fume Hoods: Experiments involving toxic, flammable, or heat should be conducted in a fume hood. Work of a hazardous nature should never be performed where any resultant fire might block egress. Chemicals should be returned to their proper storage place at the end of the day and not left in the fume hood.

13. Exits: If possible, every laboratory room where hazardous work is performed should have at least two exits as widely separated as practical.

14. Extinguishers: The laboratory should be adequately equipped with fire extinguishers of the type suitable to combat the kind of fire which might be expected to occur.

15. Storage Shelves: All open shelves on which hazardous chemicals are stored should be equipped with a safety lip or restraining bar to prevent accidental breakage.

16. Food: No food or drinks are allowed in the laboratory or in laboratory refrigerators.

17. Ice Machines: Ice machines for laboratory use shall not be used for consumption, or to chill drinks or food. Ice machines should be marked “For Laboratory Use Only” (or a similar warning). Employees and students should always use a plastic scoop when collecting ice.

18. Visitors: Only individuals who are authorized by the responsible department, and who have a legitimate reason (academic or research) for entering the laboratory, may enter.

19. Security: Laboratories are to be locked after official departmental hours or when no one is present doing work.

20.2 ANIMALS IN LABS

In accordance with JSU Academic Affairs Faculty Handbook section 403.03, all University personnel involved in research or teaching activities involving animals must have project approval from the Institutional Review Board (IRB) and the Institutional Animal Care & Use Committee (IACUC).

20.3 BIOHAZARDS

An etiologic agent is a viable microorganism or its toxin, which causes or may cause human disease. A diagnostic specimen is any human or animal material including, but not limited to, excreta, secreta, blood and its components.

1. Specific Safety Procedures:

    a. Only authorized employees, students and visitors should be allowed to enter infectious disease laboratories or areas.
    b. No-access areas should be posted with signs reading "Warning - Highly Infectious: Keep out." (Or similar wording)

c. All infectious or toxic materials, equipment or apparatus should be autoclaved or otherwise disinfected before being washed or disposed of.
d. Ensure that all virulent fluid cultures or viable powdered infectious materials in glass vessels are transported, incubated, and stored in easily handled, non-breakable, leak proof containers.
e. On the exterior door of each lab an emergency notification sign must be posted by the responsible researcher, giving instructions to follow in the event of an emergency such as a fire or spill.
f. Floors, laboratory benches and other surfaces in the rooms in which infectious substances are handled should be disinfected.
g. No infectious materials should be pipetted by mouth. Hand or automatic pipetting devices must be used.
h. Eating, drinking, using tobacco products, or applying makeup is not permitted.
i. To minimize the hazard to maintenance personnel or emergency crews, at the close of each workday, all infectious or toxic material should be:
    i. Placed in the refrigerator and locked,
    ii. Placed in the incubator, or
    iii. Autoclaved or otherwise disinfected before the building is closed.
j. No infectious waste substances should be allowed to enter a building drainage or refuse disposal system without proper sterilization.
k. No person should transport off campus any etiologic agent unless such material is packaged to withstand leakage of contents. Specific warning labels are also required on all such packages.

20.4 CHEMICAL HANDLING

The Office of University Safety has prepared the "Chemical Management Guide" to address this subject in more detail. You can obtain a copy and special training by contacting University Safety at 256-782-8599.

1. Operations and movements should be planned before handling hazardous chemicals.

2. When mixing acid and water, the acid must always be poured slowly into water, not water into acid. Persons should avoid inhaling acid fumes. Any pouring, mixing, or dispensing of acid shall be in a ventilated hood.

3. Large containers such as carboys are to be handled mechanically by tilters, cradles, or hand-trucks.

4. Personnel dispensing or handling chemicals should always wear proper protective equipment, including gloves. goggles and when appropriate, face shields. The use of face shields does not nullify the requirement for eye protection.

5. Where accidental spills or contamination by toxic substances occur in the laboratory, clean up and monitoring of the area should begin at once. Contact the University Safety office for assistance.

6. Safety cans, carts, acid bottle carriers and other safety transport devices shall be used to carry chemicals. No corrosive or toxic chemical is to be carried down hallways or in elevators unless they are in safety containers or have equivalent protection.

7. Where the eyes or body of any person may be exposed to injurious corrosive materials, emergency deluge showers and eyewash equipment will be provided in the immediate vicinity of the potential exposure. Deluge showers and emergency eyewashes will be tested monthly.

20.5 CHEMICAL WASTE DISPOSAL

The Office of University Safety has prepared the "Chemical Management Guide" to address this subject in more detail. You can obtain a copy and special training by contacting University Safety at 256-782-8599.

1. The disposal of chemical waste is the responsibility of the Office of University Safety.

2. It is the responsibility of the waste originators to:
    a. Select proper containers to hold the waste.
    b. Properly label the container with the contents (no chemical formulas or abbreviations) or use one of the Yellow Chemical Waste Tags from University Safety.
    c. Ensure that the container is always closed unless immediately adding material to the container.
    d. Ensure that the outside of the container is clean and free of chemical residues.
    e. Store full containers in their designated Satellite Accumulation Area (SAA).
    f. Call University Safety to request chemical waste disposal.

3. Wastes will be picked up immediately if:
    a. They are in leaking containers.
    b. Potential situations involve imminent danger.
    c. In excess of Satellite Accumulation limits.

20.6 FUME HOODS

1. Laboratory-type fume hoods will be used to prevent harmful exposure of hazardous substances to students, faculty, and staff. All fume hoods will conform to the provisions of this section.

2. Fume hood face velocities will be sufficient to maintain an inward flow of air across the entire face of the hood under all operating conditions. The hood will provide confinement of the possible hazards of the user for the work that is performed. The exhaust system will provide an average face velocity of at least 60 feet per minute. For high hazard materials, where TLV concentration limits are 10 ppm or 0.1 mg/M3 or less, a face velocity of 100 fpm is necessary. Radioactive materials require a minimum average face velocity of 100 fpm.

3. Any hood failing to meet airflow requirements will be considered deficient and will be posted with a plainly visible caution sticker that prohibits the use of hazardous substances within the hood.

4. Mechanical ventilation will always remain in operation when hoods are in use and for a sufficient time thereafter to clear hoods of airborne hazardous substances in the hood. Containers will be covered or capped.

5. When determining the need for a fume hood, consider TLV's, toxicity, vapor pressure, flammability, possible formation of toxic dusts, aerosols, mists, vapors or gases, smoke and pathogenic or carcinogenic properties. Use a fume hood when in doubt.

6. To protect persons on the roof, exhaust stacks of high hazards hoods will extend at least 7 feet above the roof and discharge vertically upward.

7. Most sashes are not designed as "Safety Shields" and, therefore, supplementary shields must be used for body protection when working with potentially violent reactive chemicals.

8. Remove chemicals and apparatus, when practical, from the fume hood when not in use.

9. Local exhaust ventilation (special exhaust systems designed to ventilate a small special area) is used to collect contaminants from specialized procedures. When properly installed, these special exhaust systems are preferred, rather than having to place the equipment in a standard fume hood, where valuable fume hood space would be lost for other work.

20.7 GLASSWARE HANDLING

1. Cracked, chipped, broken or otherwise damaged glassware should be taken out of service immediately.

2. Broken glass should be removed with a brush and dustpan or cardboard. Absorbent cotton may also be used to pick up fine pieces of broken glass. Cotton should be held with tongs. Never use a towel to clean up broken glass. Broken glassware, or any other material likely to cause injury to the hands, is not to be disposed of with wastepaper or other harmless materials. Use a cardboard box, lined with a double layer of plastic, and leave flaps open until filled. Then tape flaps closed and mark box "Broken Glass."

3. All glass vessels, one liter or over, used in high-vacuum systems, are to be enclosed with screening or safety glass shields or wrapped with tape.

4. Glass apparatus used at pressure above atmospheric is to be completely shielded to prevent the escape of flying particles or the container contents in the advent of breakage. Glass vessels that are used at atmospheric pressure, but are connected to a source of high pressure, should be protected by a mercury or water seal, to prevent the inadvertent application of pressure.

5. Glass cleaning:
    a. Dirty glass should be removed from the work area immediately after use. It should not be allowed to accumulate on bench tops or sinks.
    b. All glassware is to be rinsed of toxic, corrosive, or other dangerous materials before being turned over to dishwashing personnel. Organic residues can react with strong oxidizing agents.
    c. To remove organic materials from glassware, use soap and water, a suitable solvent, a spatula, or, if necessary, cleaning solution (dichromatesulfuric acid), for most resistant deposits. Never use nitric acid or mixed nitrating acids with organic materials.

20.8 INFECTIOUS AND ANIMAL WASTES DISPOSAL

The following procedure will be used in disposal of all infectious and animal wastes (NOTE: Non-infectious biological waste may still be considered hazardous waste, especially when formaldehyde is used. Contact University Safety with any questions or concerns you may have.)

1. All infectious waste will be rendered non-infectious by autoclave, placed in a sturdy, leak-proof container and disposed of properly.

2. Non-infectious animal waste may be placed in sturdy, leak-proof containers and disposed of in the large outdoor trash bins. Double-bagging is an acceptable procedure.

3. While animals are waiting to be rendered non-infectious, they will be refrigerated at 35° F to 40° F until time of treatment and ultimate disposal.

20.9 LABORATORY EQUIPMENT

1. Never remove guards or other safeguards from equipment or attempt to defeat their purpose. Inspect and maintain equipment and accessories to prevent injuries. Equipment that is in a state of disrepair, or is otherwise unsafe, must be disconnected from the power supply and repaired or discarded.

2. Equipment which uses gas, such as flame photometers, etc., shall be reviewed for the following:
    a. Safeguards to prevent inadvertent ignition.
    b. Check valves to prevent gas from surging back into gas line.
    c. Flame arrestors to prevent flashback.
    d. Gas-tight fittings and piping.
    e. Pressure-limiting devices.

3. When installing a centrifuge carefully consider location, type, and use. Make certain it is securely anchored and instruct all users on the importance of balancing before use. Also consider:
    a. Adequate shielding against accidental "fly-aways"
    b. Prevention of "walking",
    c. Top equipped with disconnect switch which shuts off rotor if opened,
    d. Positive locking of head, and
    e. Electrical grounding.

4. Hand protection (tongs, heavy duty leather gloves, etc.) is needed when placing or removing samples from ovens, furnaces, and hot plates. Mantles must be used only with suitable variable power stats to avoid exceeding rated wattage. Also review for:
    f. Blowout panels or magnetic latches (latches are more desirable if they open at pressures just above one atmosphere),
    g. Reliable, well-maintained, thermostatic controls marked in definite units,
    h. Electrical grounding of cabinets and conductive parts, and
    i. On/off switch with pilot light is required for hot plates, soldering irons, etc.

5. All electrical cords for heating units must be UL-approved and have insulation designed for such. See Section II, Chapter 13, “Electrical Safety”.

6. Pressure-release controls on approved design must be provided to safely open autoclaves.

20.10 LASERS

1. Only qualified and trained employees will be assigned to install, adjust, and operate laser equipment.

a. Proof of the qualification of the laser equipment operator will always be available and in possession of operator.
b. Employees, when working in areas in which a potential exposure to direct or reflected laser light greater than 0.005 watts (5mW) exists, will be provided with eye protection devices which filter wavelengths emitted by the laser.

2. Areas in which lasers are used will be posted with standard laser placards.

3. Beam shutters or caps will be utilized or the laser turned off when laser transmission is not actually required. When the laser is left unattended for a substantial period of time, such as overnight or at change of shifts, the laser will be turned off.

4. Only mechanical or electronic means will be used as a detector for guiding the internal alignment of the laser.

5. The laser beam will not be directed at any individual or across open spaces (hallways, aisles, etc.) accessible to people.

6. Shiny surfaces which can cause reflections should be covered or otherwise removed from the laboratory.

7. Laser equipment will bear a label to indicate maximum output.

8. Employees shall not be exposed to light intensities above:
   a. Direct staring: 1 microwatt per square centimeter;
   b. Incidental observing: 1 milliwatt per square centimeter;
   c. Diffused reflected light: 2 1/2 watts per square centimeter.

9. Laser unit in operation should be set up above the heads of the employees, when possible.

20.11 ULTRAVIOLET LAMPS

1. Personnel using ultraviolet lamps of low intensity (e.g., 15 watt germicidal) should wear glasses with side shields (either prescription glass on non-UV transmitting glassblower's glasses) and opaque rubber gloves. For high intensity light sources further, protective devices are needed: wrap-around, non-UV transmitting face mask, arm and body covering such as long sleeve shirt and laboratory coat, in addition to opaque gloves.

2. Ultraviolet lamps in biological safety cabinets or special enclosures will be turned on only when the cabinet or enclosure is not in use.

3. All UV light fixtures should bear a warning label placed on the outside of the reflector, instructing to turn the lamp off before attempting to work in the immediate vicinity.

CHAPTER 21 – *SHOP SAFETY RULES*

21.1 GENERAL RULES

1. Personnel will not be permitted to operate any machinery until they have been instructed as to the hazards and the proper operation of such equipment and the use of protective devices.

2. All floors will be kept in good repair and will be free from protruding nails, splinters, holes, unevenness, and loose boards. Effective means to prevent employees from slipping on the floors will be provided.

3. Aisles will be of sufficient width to permit safe passage of personnel, trucks, or material.

4. During all working periods each working area, operation, or process will be adequately lit and glare minimized.

5. Tools, machines, devices, or other equipment, which are hazardous because of defects or other conditions will not be used until they are repaired.

6. Areas around machines should be kept clean and clear of obstructions. All spilled oil or grease will be cleaned up immediately.

7. Do not clean chips from the surface of machines with compressed air or with hands; a brush or hook should be used. Where general cleaning of machines and equipment by compressed air is considered necessary or recommended by the manufacturer, the outlet pressure will be reduced to 10 psi or less by means of a regulator or pressure reducing control nozzle designed for this purpose.

8. Cleaning of one's clothes with compressed air is prohibited.

9. When using portable electrical equipment around machine tools, keep all electrical cords clear of moving parts.

10. Do not place hand tools on machines. Keep them in their assigned location.

11. Loose, flowing, or torn clothing, gloves, neckties, long sleeves and rings or bracelets will not be worn around machinery such as band and circular saws, drill presses, grinders, joiners, planers, lathes, and sanders. Snug-fitting clothing will be worn. Long hair will be tied back or secured to prevent entanglement.

12. Goggles or face shields will be worn when grinding or when there is danger of flying particles.

13. Gloves are not to be worn around rotating machinery unless sharp or rough materials are being handled. If gloves are worn because of sharp or rough material, care should be exercised to prevent them being caught in the machinery.

14. All guards on machines are to be properly adjusted and in working order before starting the machine.

15. All gear and belt guards must be in place before machine is operated.

16. Machine guards must always be kept in position unless removal is authorized for repairs or cleaning.

17. Be sure the work surface is clear before starting any machine.

18. Unless conditions make it impractical, no employee should be permitted to operate electric or mechanical equipment or machines in a building or room alone.

19. Dull, badly set, improperly filed, or improperly tensioned saws will be immediately removed from service. Indications of improperly adjusted or malfunctioning saws are apparent when material sticks, jams, or kicks back when it is fed into the saw. A saw which has gum from wood stuck to its blade will be cleaned immediately.

20. A push stick made of a narrow strip of wood or similar material with a notch cut in one end will be used to push material through saws where there is a possibility of the operator's hand or fingers coming in contact with the blade of the saw.

21. All projecting keys, set screws and other projections in revolving parts will be made flush or guarded by a substantial metal cover as practicable.

22. All power saws will be guarded underneath and behind the table to prevent possible personal contact.

23. A mechanical or electrical power control will be provided on each machine that will make it possible for the operator to cut off the power from the machine being operated without leaving the operator's position.

24. Operations in poorly ventilated areas that create dust, shavings, chips, or slivers, will be equipped with an exhaust system of sufficient strength and capacity to remove such refuse from the points of operation and immediate vicinities of equipment and workplace.

25. Do not repair, oil, or clean machinery while it is in motion or power is on. Only remote-control lubrication will be accomplished under these conditions.

26. Do not use electrical equipment or machines with frayed or otherwise deteriorated insulation.

27. Electrically driven portable machinery and fixed electrical equipment will have the frame grounded.

28. Machines designed for a fixed location will be securely anchored to prevent movement.

29. Foot protection (safety shoes) should be considered where there is a reasonable possibility of dropping heavy objects.

30. Do not attempt to remove foreign objects from the eye or body, unless minor such as dust or wooden splinters; obtain proper medical treatment.

31. In case of injury, no matter how slight, report it to your supervisor.

21.2 HAND TOOLS

1. All hand tools will be maintained in a safe and operable condition. Worn or defective parts will be repaired or replaced before operating hand tools.

2. All tools will be restricted to the use for which they were designed for and used only by those employees qualified and authorized to use such tools.

3. Goggles are to be worn by persons using hand tools when there is a possibility of flying chips or other pieces of material injuring workers' eyes.

4. Listed below are requirements which hand tools must meet before workers use them:
    a. Files and rasps will be equipped with a securely fitted, substantial handle.
    b. The head on a hammer shall be wedged securely and squarely on the handle and neither the head nor the handle will be chipped or broken.
    c. Care will be taken to select a screwdriver of the proper size to fit the screw head. Screwdrivers with split or splintered handles will not be used. The point/blade of the screwdriver will be kept in the proper shape with a file or grinding wheel. Screwdrivers will not be used as punches, chisels, or nail pullers.
    d. Only wrenches in good condition will be used; dispose of unrepairable tools, a bent wrench, if straightened, has been weakened and must not be used. Also check for sprung jaws on adjustable wrenches. Always pull toward yourself, never push, since it is easier to brace against a backward pull than against a sudden lunge forward should the tool slip or break.
    e. Pliers will be kept free from grease and oil and the teeth or cutting edges will be kept clean and sharp. The fulcrum pin, rivet or bolt will be snug but not tight.
    f. Only saws that are sharp and properly set will be used. A crosscut saw will be used for cutting across the grain, ripsaw for cutting with the grain.
    g. Hack saw blades are to be properly adjusted in the frame to prevent buckling. The number of teeth per inch will be selected for the work. Pressure should be applied on the down stroke only, with the teeth pointed forward into the cut.
    h. Wrecking bars and crowbars will be kept sharpened and free from burrs.
    i. Before shovels are used, they are to be inspected by the worker to insure the handle is strong and smooth, the grip is free from splinters and that the blade is smooth and sharp.

21.3 POWERED TOOLS, GENERAL

1. Portable power tools will be kept cleaned, oiled and in good mechanical repair. They will be carefully inspected before use. The switches must operate properly, and the cords must be clean and free from defects. The plug will be clean and sound. Grounding plugs on cords must not be broken off.

2. All portable powered tools capable of receiving guards and/or designed to accommodate guards will be equipped with such guards. This is to prevent possible injury of the operator.

3. All electric powered portable tools with attached electrical cords shall be grounded.

4. All hand-held powered tools of a hazardous nature will be equipped with a constant pressure switch or control that will shut off the power when pressure is released from the switch. Other circular saws, chain saws and percussion tools may have a lock-on control provided that turnoff can be accomplished

by a single motion of the same finger or fingers that turn it on. All other less hazardous hand-held powered tools may be equipped with a positive "on-off" control.

5. Portable circular saws having a blade diameter over 2 inches, will be equipped with guards or hoods.

6. All pneumatic powered portable tools will be equipped with an automatic air shutoff valve that stops the tool when the operator's hand is removed from the control. Safety clips or retainers will be installed on pneumatic tools to prevent tools from being accidentally expelled from the barrel; or other effective means to prevent accidents from this source will be used.

7. Abrasive wheels with a diameter over 2 inches will be used only on machines equipped with safety guards. The guard will cover the spindle end, nut, and flange projections. Guards on operations where the work provides a suitable measure of protection to the operator may be so constructed that the spindle end, nut, and other flange are exposed.

8. All explosive-actuated fastening tools muzzle ends will have a protective shield or guard designed to confine any flying fragments or particles. The tool will be so designed that it cannot be fired unless it is equipped with a protective shield or guard. A department will not permit an employee to use a power-actuated tool until the employee has received training as recommended by the manufacturer.

21.4 BAND SAW SAFETY PROCEDURES

1. Adjustable guards should be kept as close over the point of operation as the work permits.

2. When a band breaks, shut off the machine and stand clear until the machine has stopped.

3. Never stop a machine by pushing material against the band.

4. Cracked saw blades should not be used. A "click" as the blade passes through the work denotes a cracked blade.

5. Refer to manufacturer's recommendations for procedures on changing the blades and further safety precautions.

6. Wear eye and hearing protection.

21.5 CIRCULAR SAW SAFETY PROCEDURES

1. Stand to one side. Do not stand directly in line with work being fed through the saw.

2. A ripsaw will not be used for crosscutting nor will a crosscut saw be used for ripping.

3. Check the saw blade to determine if it is in good condition. This means sharp, unbroken, free from cracks and the proper saw for the job.

4. Never reach over the saw to obtain material from the other side.

5. Never oil the saw or change the gauge while the machine is running.

6. When shutting off power, never stop the saw quickly by thrusting a piece of wood against it. Be sure the saw has stopped before leaving it.

7. A pusher stick will be used whenever the size or shape of the material requires the hands to be near the saw blade.

8. The appropriate guards must always be kept in place.

9. Do not alter manufacture's saw speed. The peripheral speed of circular saws will not exceed 12,000 feet per minute unless the saw has been manufactured for a higher speed and is so marked.

10. Wear eye and hearing protection.

21.6 DRILL PRESS SAFETY PROCEDURES

1. When drilling, tapping or reaming material, see that it is securely fastened by blocks or clamps so that is cannot spin. In no case should the operator rely on his hand to secure the material from turning.

2. When tightening a drill or drill chuck, be sure to remove release key before starting the machine.

3. Run the drill only at the correct speed.

4. Never attempt to loosen the chuck of a tapered shank drill unless the power is turned off.

5. When chucks are being removed from the spindle, they should be lowered close to the table so that the chuck will not fall.

6. Never use hands to remove drillings from the work. Do not wear loose fitting gloves.

7. Wear eye protection.

21.7 GRINDING SAFETY PROCEDURES

1. All abrasive-wheel machinery will be equipped with protection hoods, which will be of such design and construction as to effectively protect the user from flying fragments of a bursting wheel insofar as the operation will permit.

2. Wear a face shield, safety goggles or cover goggles when grinding.

3. Grinding wheels will be equipped with tool rests which are set not more than one-eighth inch from the wheel.

4. The side of an emery wheel will not be used for grinding unless it is a special type wheel for that purpose.

5. Stand to one side when starting up a machine and do not exert great pressure on the wheel until it has had time to reach constant speed.

6. Report to your supervisor immediately any broken, cracked, or otherwise defective wheel.

7. New wheels are to be mounted only by an experienced person.

8. Never use a wheel that has been dropped or has received a heavy blow, even though there is no apparent damage. The wheel may be weakened to a point where it may fly apart.

9. An abrasive wheel will not be operated at a speed in excess of the speed recommended by the manufacturer of the wheel.

10. Never use hands to remove filings from the work.

11. Wear hearing protection.

21.8 JOINER AND PLANER SAFETY PROCEDURES

1. Stand to one side. Do not stand directly in line with work being fed through the machine.

2. When pieces shorter than 18 inches are machined, a tractor feed or safety pusher stick of suitable design will be used.

3. Do not take too heavy a cut, as this will cause kickback.

4. Wear eye and hearing protection.

21.9 LATHE SAFETY PROCEDURES

1. Make sure that all gear and belt guards are in place.

2. Keep hands off chuck rim when lathe is in motion.

3. Do not attempt to adjust a tool while the lathe is running, or its parts are moving.

4. Always use a brush to remove chips--never the hands.

5. After adjusting the chuck remove the chuck wrench immediately.

6. Wear eye and hearing protection.

21.10 SANDER SAFETY PROCEDURES

1. Belt sanders shall have both pulleys and the unused run of the sanding belt enclosed. Rim guards will be acceptable for pulleys with smooth disc wheels provided that on-running nip points are guarded. Guards may be hinged to permit sanding on the pulley.

2. Disc sanders will have the periphery and back of revolving disc guarded, and the space between revolving disc and edge of table will not be greater than one quarter inch.

3. Do not push the work against the sander surface with excessive force as this may cause it to be thrown.

4. Wear eye and hearing protection.

21.11 WELDING, CUTTING, AND BRAZING

1. Welding and cutting are done on an ever-increasing variety of metals and metal coatings. Four primary hazards are associated with welding operations:
    a. ultraviolet and infrared light,
    b. oxides of nitrogen,
    c. ozone, and
    d. metal fumes.

2. Before cutting or welding is permitted, the area shall be inspected by the individual responsible for authorizing cutting and welding operations. Cutting or welding will be permitted only in areas that are, fire safe. All movable fire hazards in the vicinity shall be taken to a safe place.

3. Guards shall be used, when practical, to confine the heat, sparks, and slag.

4. Suitable fire extinguishing equipment shall be immediately available in the work area and shall be maintained in a state of readiness for instant use.

5. No welding, cutting or other hot work shall be performed on used drums, barrels, tanks or other containers until they have been cleaned so thoroughly as to make absolutely certain that there are not flammable materials present which when subjected to heat, might produce flammable or toxic vapors.

6. Welding goggles or approved eye protection will be worn during all gas welding or cutting operations. Eye protection will also be worn during all brazing operations. Welding helmets will be worn during all arc-welding operations.

7. All welders should wear flame resistant gauntlet gloves. Flame resistant aprons may be desirable as protection against radiated heat and sparks. Cotton clothing, if used, should be chemically treated to reduce its combustibility. All clothing should be reasonably free from oil and grease.

8. Local exhaust systems will provide minimum air velocities in accordance with the latest Industrial Ventilation Manual, A Manual of Recommended Practice, published by the American Conference of Governmental Industrial Hygienists.

9. Local exhaust ventilation will be used when potentially hazardous materials are used as base metals, fluxes, coatings, and plating or filler metals. Respiratory protective equipment will be used when adequate ventilation is not available, or welders are welding on materials that may produce very toxic fumes.
    a. These include, but are not limited to the following materials:
        i. Beryllium
        ii. Cadmium
        iii. Chromium
        iv. Fluorides

v. Lead
vi. Mercury
vii. Zinc (galvanized metal)
viii. Inert-gas metal-arc welding or oxygen cutting of stainless steel

10. Where workplace monitoring records clearly demonstrate that exposure levels are not exceeded, neither mechanical ventilation nor protective equipment is required.

11. Where the work permits, the welder shall be enclosed with noncombustible screens having a low reflectivity finish. Booths and screens shall permit circulation of air at floor level. Workers or other persons adjacent to the welding areas shall be protected from the rays by noncombustible or flameproof screens or shields or shall be required to wear appropriate eye protection.

12. When operations are suspended for any substantial period of time, such as during lunch or overnight, all welding equipment will be shut off.

13. The frames of all arc welding and cutting machines shall be grounded either through a third wire in the cable containing the circuit conductor or through a separate wire which is grounded at the source of the current.

14. All arc welding and cutting cables will be completely insulated, flexible, and capable of handling the maximum current requirements of the work in progress.

15. Mixtures of combustible gases and air are very explosive and will be carefully guarded against. No device or attachment facilitating or permitting mixture of air or oxygen with combustible gases prior to consumption, except at the burner or in a standard torch or blowpipe, will be allowed unless approved for the purpose.

16. Acetylene and liquefied fuel-gas cylinders will be placed with valve-end up whenever they are used. If a leak develops at the fusible plug or elsewhere on a cylinder, the cylinder will be moved well away from any source of ignition. Contact University Safety for assistance in locating an isolated area to bleed the gases from the cylinder. Bleeding is to be performed by opening the cylinder valve slightly and allowing the gases to escape slowly. A person will remain at a safe distance away from the cylinder to warn people not to approach the cylinder and to insure no source of ignition comes within 100 yards of the cylinder. After the cylinder is empty, it will be plainly tagged as defective and in need of repair before refilling.

17. The primary hazard associated with silver soldering is the inhalation of cadmium fumes. Silver solder generally contains 18 to 20 percent cadmium that is emitted as a fume when silver solder is heated.

18. Silver soldering operations always should be conducted where local exhaust ventilation is available to remove the cadmium fumes and fluoride fumes, which may be emitted from the flux. When exhaust ventilation is inadequate, the worker shall wear an approved respirator with a high efficiency particulate filter.

21.12 KILN SAFETY PROCEDURES

1. Metal pouring is a particularly hazardous operation due to the possible presence of impurities in the molds, ladles, pouring troughs or the metal itself which could cause "splattering."

2. Ceramic kiln brick and other ceramic objects hold heat for a long time without visual effect. Always handle them while wearing gloves.

3. Individuals operating metal melting furnaces or kilns must be provided with and required to wear approved eye shields, protective gloves, and aprons. Bare flesh should not be exposed during the pouring or removal of heated items.

CHAPTER 22 – *MACHINERY AND MACHINE GUARDING*

22.1 INTRODUCTION

1. Machine guarding will be provided to protect the operator and others from injury from moving parts.

2. Guards will be affixed to the machine where possible and secured elsewhere if for any reason attachment to the machine is not possible. The guard will be such that it does not offer an accident hazard in itself.

3. The point of operation of machines whose operation exposes an employee to injury will be guarded.

22.2 ABRASIVE WHEELS

1. Abrasive wheels will be used only on machines provided with safety guards.

2. Such safety guards will be hoods of such design and construction as to effectively protect the employee from flying fragments of a bursting wheel insofar as the operation will permit.

3. The hood guard will cover the spindle end, nut, and flange projections. The safety guard will be mounted as to maintain proper alignment with the wheel, and the strength of the fastenings will exceed the strength of the guard.

4. On offhand grinding machines, work rests will be used to support the work. They will be of rigid construction and kept adjusted closely to the wheel with a maximum opening of one-eighth inch to prevent the work from being jammed between the wheel and the rest.

5. An adjustable tongue-guard will be installed at the top end of the hood-guard and clearance to the wheel periphery will not exceed one-fourth inch.

6. Whenever the nature of the work requires contact with the wheel below the horizontal plane of the spindle, the exposure will not exceed 125°.

7. Immediately before mounting, and periodically thereafter, all wheels will be closely inspected and sounded by the user (ring test) to make sure they have not been damaged. The spindle speed of the machine will be checked before mounting of the wheel to be certain that it does not exceed the maximum operating speed marked on the wheel.

22.3 CLEANING, REPAIRING AND SERVICING

1. Machinery or equipment capable of movement will be stopped and the power source locked off or disengaged to prevent inadvertent movement during cleaning, servicing, or adjusting operations.

2. Every power-driven machine equipped with lockable controls or readily adaptable to lockable controls will be locked out or positively sealed in the "off" position during repair work. Machines not equipped with lockable controls shall be deenergized or disconnected from its source of power, or other action that will prevent the machine from inadvertent movement.

3. A sufficient number of accident prevention signs or tags and padlocks, or other similarly effective means will be provided and used. Signs, tags, or padlocks shall be secured to the controls.

4. If the machinery or equipment must be capable of movement during this period in order to perform the specific tasks, the employees will minimize the hazard of movement by the use of extension tools (e.g. extended swabs, brushes, scrapers) or other methods or means. Employees will be made familiar with the safe use and maintenance of such tools by thorough training. Employees shall install appropriate signage and barriers to prevent the accidental energizing of equipment.

22.4 MACHINES, MISCELLANEOUS

1. When the periphery of the blades of a fan are less than seven (7) feet above the ground, floor, or working level, the blades will be guarded. The guard will have openings no larger than one-half (1/2) inch.

2. The in-running sides of power operated rollers or cylinders on printing type presses will be provided with a guard so arranged that the material can be fed to the rollers without permitting the operator's fingers to be caught between the rollers or cylinders.

3. Power-driven Guillotine Paper Cutters will be provided with:
    a. A non-repeat device that will automatically lock the clutch mechanism into place so that the cutter cannot make a second stroke until the hand lever is again moved into the starting position.
    b. A starting device that requires the simultaneous action of both hands during the cutting motion of the knife.
    c. Simultaneous operation of paper cutters by more than one operator will not be permitted or required by the employer.

4. Horizontal tilting type mixers will be provided with a cover over the top of the mixer. An interlocking device shall be provided so that power cannot be applied to the agitators unless the mixer is in operating position, with cover in place. The mixer when tilted will be operated with the cover open only if equipped with an electrical push button when operating the mixer with the cover open; the button will be located so that the operator cannot reach into the mixer while pressing the button.

22.5 METALWORKING EQUIPMENT

1. Metal lathe faceplates and chucks should have no projection; or circular shields should be installed to prevent accidental contact with projections. Safety type lathe dogs, with no projecting set screws should be used. Splash Guards should be provided to protect the operator and the working area from cutting or cooling fluids thrown from the work. Pipe guards or other enclosures should be installed to prevent injury from stock projecting from turret lathes or automatic screw machines.

2. Milling machines should have a transparent shield over the cutter that will prevent accidental contact with the cutter and serve also as a chip guard. Guards may be adjustable.

3. Drill presses should have the spindle enclosed as completely as possible. The chuck will be tightened securely with the key provided. The key will not be left in the chuck. The work will be firmly clamped, and a center punch used to score the material before the drilling operation is started. If the work should slip from the clamp, no attempt will be made to stop it with the hands.

4. Circular metal saws should be equipped with a hood guard that automatically adjusts itself to the thickness of the stock being cut.

5. Band saws will have upper and lower wheels completely enclosed with sheet metal or heavy small-mesh screen. The portion of the saw blade between the upper saw guide and the upper saw blade wheel must be completely enclosed with a sliding fixture attached to the guide.

6. Mechanical power and foot and hand power squaring shears will be provided with a guard which will prevent the hands of the operator from entering the zone traveled by the knives of the shears while they are in motion. This guard may be a fixed barrier, set not more than three-eighths inch above the table or a self-adjusting barrier with a limit of three-eighths inch above the table, but that will automatically rise to the thickness of the material. Automatic clamps of "hold-downs" on squaring shears, when cutouts are filled in with plastic or screen, will be acceptable as a guard. Hydraulic or pneumatic hold-downs will be guarded by U-shaped guards coming down to not less than three-eighths inch of the table or other equivalent method.

22.6 POWER TRANSMISSION EQUIPMENT

1. Guards will be of proper design and will be adequately secured in place. Guards will enclose or otherwise guard the power transmission equipment to protect the employee against exposure to the dangerous moving parts.

2. Where a guard or enclosure is within 2 inches of moving parts, openings through the guard will be small enough to prevent the passage of any object one-half inch in diameter.
    a. Where a guard or enclosure is within 4 inches of moving parts, openings through the guard will be of such size as will preclude the passage of any object greater than one-half inch in diameter.
    b. Where a guard is located between 4 inches and 15 inches from moving parts, the maximum opening will be of such size as will preclude the passage of any object greater than 2 inches in diameter.
    c. Standard railing guards will be placed not less than 15 inches nor more than 20 inches from any moving parts provided.
    d. The use of nylon mesh or materials of equivalent strength with holes not exceeding 1/2 inch to modify an existing substandard fan guard is acceptable, provided the combination of the two provides adequate protection and the mesh cannot be pushed into the danger zone during normal use.

3. Any part of a belt and pulley drive, involving the use of flat, crowned, or flanged pulleys, which is 7 feet or less above the floor or working level will be guarded. Exceptions: fan belt drives on motor vehicles used primarily for the transportation of men and materials and internal combustion engine fan belt drives guarded by side screens extending to the shoulder of the engine block.

4. All exposed parts of shafting seven feet or less above the floor or working level will be guarded. Transmission shafting under benches will also be guarded.

5. Any exposed part of a flywheel or other dangerous moving power transmission equipment 7 feet or less above the floor or working level will be guarded.

6. All gears and sprockets wherever located (except as provided for in "c") will be guarded by any one of the following methods:
    a. By complete enclosure.
    b. With a standard shield guard surrounding the gears or sprockets at least 7 feet high and extending at least 6 inches above the mesh point of the gears or the contact point of the chain and sprocket.
    c. Gears and sprockets in inaccessible locations need not be guarded as provided for in (a) and (b) provided they are equipped with extension lubricant fittings or systems which may be serviced from an accessible location which is at least 2 feet from the mesh point of the gears, or contact point of the chain and sprocket.

7. Where oiling or greasing must be done, openings with hinged or sliding covers will be provided. Where machines or machine parts must be lubricated while in motion, the lubricant fittings will be located at least 24 inches from the dangerous moving parts unless such parts are guarded and the fittings are piped outside the guard.

22.7 WOODWORKING EQUIPMENT

1. Circular hand-fed rip and crosscut table saws will be guarded by a hood which will completely enclose that portion of the saw above the material being cut. The hood and mounting will be arranged so that the hood will automatically adjust itself to the thickness of and remain in contact with the material being cut. All exposed parts of the saw blade under the table will be guarded. Each hand-fed circular rip and crosscut saw will be furnished with a spreader. Each top-mount circular ripsaw will be provided with anti-kickback devices.

2. A hood or guard will be used that will cover a self-feed circular ripsaw to at least the depth of the teeth. The hood or guard need not rest upon the table nor upon the material being cut but will extend to within one-half inch of the stock being worked. The feed rolls or star wheels will be enclosed by a cover coming down to within one-half inch of the stock being worked. A spreader will be provided except where a roller wheel is provided on the back of the saw. Self-feed circular ripsaws will be equipped with an anti-kickback device installed on the in-feed side.

3. Swing saws will be provided with a hood that will completely enclose the upper half of the saw, the arbor ends and the point of operation at all positions of the saw. Its hoods will be so designed that it will automatically cover the lower portion of the blade, so that when the saw is returned to the back of the table, the hood will rise on top of the fence; and when the saw is moved forward, the hood will drop on top of and remain in contact with the table or material being cut. Each saw will be provided with an effective device to return the saw automatically to the back of the table when released at any point of its travel. Limit stops will be provided to prevent the saw from swinging beyond the front or back edges of the table. A latch or equivalent device should be provided to catch and retain the saw at the rear of the table and to prevent rebounding.

4. The upper hood of a radial saw will completely enclose the upper portion of the blade down to a point that will include the end of the saw arbor. The sides of the lower exposed portion of the blade will be guarded to full diameter of the blade by a device that will automatically adjust itself to the thickness of the stock and remain in contact with stock being cut. When radial saws are used for ripping, a spreader and non-kickback fingers will be provided. An adjustable stop will be provided to prevent the forward travel of the blade beyond the front end of the table. There shall be a device that will return the saw automatically to the back of the table when released.

5. All portions of the saw blade will be enclosed or guarded on band saws except the working portion of the blade between the bottom of the guide rolls and the table. The outside periphery of the enclosure will be solid. The sides of the band wheels will be either enclosed by solid material or wire mesh or perforated metal.

6. Joiners will be equipped with cylindrical cutting heads. A suitable guard that will automatically adjust itself to cover that portion of the cutting head not protected by material in process will be used. The exposed portion of the cutting head at the rear of the fence will be covered and, where knives are exposed beneath the table, they will be guarded. A safety pusher device of suitable design will be provided and used.

7. Knife heads of wood shapers and cutting heads of other machines, not automatically fed, will be guarded or templates, jigs or fixtures which will enable the part to be processed without exposing the operator's hands to the danger zone will be used. Double-spindle shapers will be provided with a spindle starting and stopping device for each spindle. Single cutter knives in shaper heads will not be used. Knives will balance each other by weight and will be so mounted in the head as to revolve at full speed without dangerous vibration. Knife heads of woodworking machines which are automatically fed - such as stickers, planers, molders, and matchers – will be guarded when exposed to contact. The feed rolls will be enclosed, except that part as may be necessary to feed stock.

8. Sanding machines will be guarded as below:
   a. Feed rolls of self-feed machines will be protected with a guard to prevent the hands of the operator from coming into contact with the in-running rolls at any point.
   b. Disk sanders will have the exhaust hood or other guard so arranged as to enclose the revolving disk, except for that portion of the disk above the table.
   c. Belt sanders will be provided with guards at each nip point where the sanding belt runs on to a pulley. The unused run of the sanding belt shall be guarded against accidental contact.

CHAPTER 23 – *MATERIAL HANDLING EQUIPMENT*

23.1 INTRODUCTION

1. Whenever equipment is used to elevate employees for work positioning, a safe work platform having sufficient space to accommodate the employees and material being elevated will be used. The platform must be no less than 24 inches by 24 inches in working space and equipped with 42-inch guardrails including mid-rails on all open or exposed sides. Four-inch toe-boards will be installed if work is performed 4 feet or more above other workmen or passageways. Where the nature of the work prohibits the use of guardrails, a safety harness with a lanyard not more than 4 feet in length will be used.

   Operating rules whenever elevating personnel:

   a. Use a securely attached safety platform.
   b. Make sure the lifting mechanism is operating smoothly.
   c. Place mast vertical and never tilt forward or backward when elevated.
   d. Place truck in neutral and set parking brake.
   e. Lift and lower smoothly and with caution.
   f. Watch for overhead obstructions.
   g. Keep hands and feet clear of controls other than those in use.
   h. Never travel with personnel on the work platform other than to make minor movements for final positioning of the platform.

2. Dock plates will be constructed and maintained with strength sufficient to support the load carried and secured in position when spanning the space between the dock and the vehicle. When dock plates are secured in position, the end edges of the plate will be in substantial contact with the dock and with the vehicle bed in such a manner as to prevent rocking or sliding.

3. Pallets will be constructed and maintained with strength adequate for the loads being handled. Unsafe and defective parts will be repaired or replaced.

4. Cargo, materials, or equipment found sufficiently broken or damaged as to afford a hazard will be immediately repaired or will be set aside at a safe distance away from the working area so that they can be repaired.

23.2 AERIAL LIFTS

This section applies to aerial devices used to elevate personnel to job sites above ground.

1. Aerial baskets or platforms will not be allowed to rest on or against any structure when workmen are on the platform or in the basket while in an elevated position.

2. Lift controls will be tested in accordance with the manufacturer's recommendations or instructions each day of use prior to use to determine that such controls are in safe working condition.

3. Only authorized persons will operate an aerial lift.

4. Belting off to an adjacent pole, structure, or equipment while working from an aerial lift will not be permitted.

5. Employees will always stand firmly on the floor of the basket and will not sit or climb on the edge of the basket or use planks, ladders, or other devices as a working position.

6. Boom and basket load limits specified by the manufacturer will not be exceeded.

7. The braking systems will be set and when outriggers are used, they will be positioned on pads or a solid surface. Wheel chocks will be installed before using an aerial lift on an incline provided, they can be safely installed. All outriggers will be equipped with individual locks at the outriggers.

8. The insulated portion of an aerial lift will not be altered in any manner.

9. An aerial lift will not be moved when the boom is elevated.

10. Lower level controls will not be operated unless permission has been obtained from the employee in the lift, except in case of emergency.

11. Each aerial lift will display a permanent plate showing:
    a. Make, model and manufacturer's serial number.
    b. Rated capacity.
    c. Platform height.
    d. Maximum recommended operating pressure of hydraulic.
    e. Caution or restrictions of operation.
    f. Operating instructions.
    g. Manufacturer's rated line voltage.

12. Any unsafe conditions disclosed by the inspection will be corrected promptly. Only designated persons will do adjustments and repairs.

23.3 CABLES, CHAINS AND ROPES

1. The safe working load recommended by the manufacturer for specific identifiable cables will be followed, provided that a safety factor of not less than five (5) is maintained. The following also apply to cables:
    a. Protruding ends of strands in splices will be covered or blunted.
    b. Where "U" bolt wire rope clips are used to form eyes, the "U" bolt will be applied so that the "U" section is in contact with the dead end of the rope.
    c. Wire ropes will not be secured by knots.
    d. An eye splice made in any wire rope will have not less than three full tucks.
    e. Except for eye splices in the ends of the wires, each wire rope used in hoisting or lowering shall consist of one continuous piece without knot or splice.

2. The following applies to all chains:
    a. All chains, including end fastenings, will be given a visual inspection before being used on the job. The inspection will include inspection for wear, defective welds, deformation and increase in length or stretch.

b. Chain slings will be removed from service when, due to strength, the increase in length of a measured section exceeds five (5) percent and when a link is bent, twisted, or otherwise damaged.
c. All repairs to chains will be made under qualified supervision.
d. Links or portions of the chain found to be defective will be replaced by links having proper dimensions and made of material similar to that of the chain.
e. A load will not be lifted with a chain having a kink or knot in it.
f. Chains are not to be shortened by bolting, wiring, or knotting.

3. The following applies to ropes:

a. Safe working loads of manila rope and rope slings are determined by size of rope and angle of sling. Higher safe working loads are permissible when recommended by the manufacturer for specific, identifiable products, provided that a safety factor of not less than five (5) is maintained.
b. Where synthetic fiber ropes are substituted for manila ropes of less than three (3) inches circumference, the substitute will be of equal size. In making such a substitution it will be ascertained that the inherent characteristics of the synthetic fiber are suitable for the intended service of the rope.
c. Rope which shows evidence of wear or deterioration will be carefully examined and will not be used if there is a question of its withstanding the rated safe workload.

4. The manufacturer's recommendations will be followed in determining the safe working loads of the various sizes and types of specific and identifiable hooks.

23.4 FORKLIFTS

1. All name plates and model number, type designation and load capacity markings on forklifts will be maintained in a legible condition.

2. Major modifications and structural changes to forklifts that affect the capacity and safe handling of the vehicles will not be performed by the user without prior written approval from the manufacturer unless the modification is designed, manufactured and installed in accordance with recognized good engineering principles. The capacity, operation and maintenance instruction plates will be changed accordingly.

3. Forklifts shall not be operated in areas containing combustible vapors and dusts.

4. When forklifts operate in areas where general lighting is less than 2 foot-candles per square foot, directional lighting will be provided on the truck.

5. Forklifts will have overhead guards.

6. The rated lifting capacity of all forklifts will always be displayed on the vehicle in such a manner that it is readily visible to the operator.

7. Every forklift will be equipped with:
a. Brakes or other effective devices adequate to bring them to a complete stop while fully loaded.
b. A parking brake or other effective device to prevent the vehicle moving when unattended.

8. Personnel should be properly trained – and shall successfully demonstrate competency – before being allowed to operate a forklift. This demonstration shall include the safe operation, fueling, and pre-operation checks.

23.5 HOISTS

1. The safe working load of the overhead hoist, as determined by the manufacturer, will be indicated on the hoist. This safe working load will not be exceeded.

2. The supporting structure to which the hoist is attached will have a safe working load equal to that of the hoist.

3. The support will be arranged so as to provide for free movement of the hoist and will not restrict the hoist from lining itself up with the load.

4. The hoist will be installed only in locations that will always permit the operator to stand clear of the load.

5. Air hoists will be connected to an air supply of sufficient capacity and pressure to safely operate the hoist. All air hoses supplying air will be positively connected to prevent their becoming disconnected during use.

23.6 OPERATOR RULES AND TRAINING

Every employee using forklifts, haulage vehicles, aerial lifts or other such specialized material handling equipment will fully comply with the requirements of this section. Copies of these requirements will be posted at places frequented by employee operators. They shall also be provided to each operator at the time of initial assignment and once each year.

1. Only drivers authorized by the employer and fully trained in the safe operations of these vehicles will be permitted to operate them.

2. Drivers will check the vehicle at least once per shift, and if found to be unsafe, the matter will be reported immediately. The vehicle will not be put in service again until it has been made safe. Attention will be given to the proper functioning or tires, horn, lights, battery, controller, brakes, steering mechanism, and the lift system.

3. Vehicles will not exceed the authorized or safe speed, always maintaining a safe distance from other vehicles.

4. No riders will be permitted on vehicles unless provided with adequate riding facilities.

5. Stunt driving and horseplay are prohibited.

6. Loaded vehicles will not be moved until the load is safe and secure.

7. When leaving a vehicle unattended, the power will be shut off, brakes set, and the lift mechanism left in the down position. When left on an incline, the wheel will be blocked.

8. Operators will look in the direction of travel and will not move a vehicle until certain that all persons are in the clear.

9. Vehicles will not be operated on floors, sidewalk doors or platforms that will not safely support the loaded vehicle.

10. The following additional rules will apply to forklifts:
    a. Employees will not ride or stand on the forks of lift trucks.
    b. The forks will always be carried as low as possible, consistent with safe operation.
    c. Extreme care will be used when tilting loads.
    d. Employees will not be allowed to stand or work under the elevated portion of any industrial truck, loaded or empty, unless effectively blocked to prevent it from falling.
    e. The width of one tire on the forklift shall be the minimum distance maintained from the edge of any elevated dock or platform.
    f. The forklift shall be operated in reverse if the load blocks the driver's forward view.

11. The following additional rules apply to grass cutting tractors:
    a. Where possible, avoid operating the tractor near ditches, embankments, and holes.
    b. Reduce speed when turning, crossing slopes and on rough, slick, or muddy surfaces.
    c. Stay off slopes too steep for safe operation.
    d. Watch where you are going.
    e. Do not permit others to ride.
    f. Operate the tractor smoothly--no jerky turns, starts, or stops.
    g. When tractor is stopped, set brakes securely and use park lock if available.

CHAPTER 24 – *VEHICLE OPERATIONS*

24.1 BICYCLES AND MOPEDS

1. Every person operating a bicycle on campus is subject to both the Alabama Motor Vehicle Code and the Jacksonville State University's Traffic and Parking Regulations.

2. The Department of Public Safety will enforce all laws and regulations on campus.

3. Motorized bicycles shall not be operated on walkways under power.

4. Bicycle operators shall observe all laws and regulations under the Alabama Motor Vehicle Code. Operators shall not operate their bicycles in a manner which compromises safety or jeopardizes damage to property.

5. Bicycle operators shall yield the right-of-way to pedestrians on campus.

6. When not in operation, bicycles must be parked in racks provided for that purpose.

24.2 FUELING SAFETY

1. The following rules apply to the fueling of vehicles and equipment:

    a. No vehicle shall be refueled while the engine is running. Refueling shall be done in such a manner that likelihood of spillage is minimal. If a spill occurs it is to be washed away completely, or equivalent action taken to control vapors before restarting the engine. Fuel caps will be replaced before starting the engine.
    b. Vehicles will be refueled at an off-campus location. A good metal-to-metal contact shall be kept between the fuel supply tank or nozzle of the supply hose and the fuel tank.
    c. Open lights, flames or sparking or arcing equipment will not be used near fuel storage tanks and gas pumps during refueling operations.
    d. Smoking is not permitted at or near refueling operations. Signs will be posted in the refueling areas that state: "NO SMOKING WITHIN 25 FEET"

24.3 TRANSPORTING EMPLOYEES AND STUDENTS

1. Cars, vans and buses that are used regularly for transporting employees and students shall be constructed or accommodated for that purpose, and shall be equipped with adequate seats properly secured in place, and shall be protected on sides and ends to a height of 46 inches to prevent falls from the vehicle.

2. Every motor vehicle used for transporting employees shall keep the following equipment in good repair; lamps, brakes, horn, mirrors, windshields, turn signals, tires, windshield wipers, seat belts, and other equipment affecting the safety of passengers.

3. The number of passengers shall be limited to prevent crowding and shall never exceed a number which may endanger the safe handling of the vehicle or the safety of the passengers. The passenger carrying

capacity of trucks and buses regularly used to transport employees shall be conspicuously marked on the outside of the vehicle near the door or entrance.

4. On every passenger bus every compartment with an enclosed seating capacity of seven or more shall be provided with an emergency exit remotely located from the normal means of entrance.

24.4 VEHICLE SAFETY

All operators of University equipment and vehicles act as representatives of the University and should extend every courtesy to both traffic and pedestrians. Only those employees specifically authorized and who possess a valid Alabama driver's license shall operate University-owned vehicles on University business.

1. The following rules apply to the operation of University vehicles.
    a. Drivers shall be familiar with and obey all state motor vehicle laws that apply to them.
    b. Drivers must ensure that the vehicle's insurance card accompanies the vehicle and present proof of insurance if involved in an accident.
    c. A driver shall not permit unauthorized persons to drive, operate, ride in or on a University vehicle.
    d. Seat belts will always be worn.
    e. Employees shall not permit anyone to ride on any part of any vehicle except the seats.
    f. Employees will not jump on or off vehicles in motion.
    g. Drivers shall keep a sharp lookout for persons on campus and for cyclists and be prepared for immediate stops.
    h. Smoking is not allowed in any University vehicle.

2. The following rules apply to University vehicle condition:

    a. Windshields and windows shall be kept clear of anything that may obstruct the vision of the driver.
    b. Brakes are to be tested by the driver at the start of each day. The driver shall report all defects and they shall be adjusted or repaired before the vehicle is put in operation.
    c. Turn signals, brake lights, and backup signals will be inspected daily. If they are found to be defective, they shall be repaired before the vehicle is placed in operation. No vehicle shall be operated at night unless equipped with properly working headlights, taillights and other necessary safety devices as required by law.

3. The following rules apply to University haulage vehicles:
    a. Materials and equipment shall be loaded so they will not cause a hazard by shifting. Heavy equipment and materials shall be securely fastened.
    b. Red flags during the day, and red lights at night, shall be attached to equipment or material that extends more than four (4) feet beyond the back of the vehicle. Red flags or approved clearance lights shall be attached to loads extending more than two (2) feet beyond the front of the vehicle.
    c. Tools, materials, or equipment shall not be permitted to extend beyond the permanent fixtures provided on the sides of the vehicle.
    d. Trailers or equipment, while being towed, shall be securely coupled to the truck, and if necessary, joined by auxiliary chains or cable.
    e. Towed vehicles will not be operated unless their turn signal, back-up, and brakes lights function.

4. In case of vehicle accidents occurring off-campus:
    a. Obtain medical aid for the injured (if necessary) by dialing 911.
    b. Call the University Police Department (256-782-5050) and University Safety (256-782-8599) for an investigation of the accident. If off-campus, call University Safety and local police.
    c. Follow the directions on the Insurance Card issued by the University and its agent.

APPENDIX I

RESPIRATORY PROTECTION PROGRAM

The use of respiratory protection may be required as a result of exposure to harmful particulates, fumes, gaseous vapors, and other hazardous airborne substances. In such circumstances, a respirator is assigned when other protective measures either fail or are yet to be implemented. Respirators may also be assigned to meet regulatory mandates, e.g. asbestos operations.

Employees assigned a respirator must be enrolled in and must meet all the requirements of Jacksonville State University's Respiratory Protection Program. Those employees utilizing a respirator outside of the program run the risk of not being fully protected or worse, putting themselves directly in harm's way.

All elements of the Respiratory Protection Program are managed through University Safety. Such elements include:

Hazard Assessment. When the use of respiratory protection is indicated, the hazard or hazardous substance an employee is exposed to must be fully characterized. The process will help ensure alternative measures have been fully reviewed and, in the event a respirator is needed, the best respirator is selected.

Respiratory Protection Selection. Respirators must be selected by University Safety. Respirators will be selected with, careful consideration to 1) qualitative and quantitative contaminant evaluations, 2) the work/task processes and conditions, 3) care and maintenance requirements, and 4) employee comfort.

Medical Management. Employees must complete medical surveillance requirements before the initial fit test and periodically thereafter. At a minimum, medical surveillance will include a review of both the questionnaire and the pulmonary function test by a designated medical authority. In addition, medical surveillance for specific contaminants, or work conditions may also be required.

Training. User training must be conducted before respiratory protection is used. Thereafter training is an annual requirement for as long as the employee is enrolled in the program.

Fit-Testing. When an employee is initially assigned a respirator, they must be fit tested to determine which respirator will be assigned to them. Fit-testing will be conducted only after the employee is medically cleared and has conducted the required training. Thereafter fit testing is an annual requirement for as long as the employee is assigned a respiratory.

Equipment Inspection, Maintenance and Care. Equipment will be inspected by University Safety at least once annually during scheduled user training and fit-testing. Recommendations for equipment maintenance, care or replacement will be made at that time. Departments are responsible for outlining additional inspection, maintenance and care requirements for those employees assign such protection within their area of responsibility.

Record-keeping. Except for medical records, all recordkeeping will be maintained by University Safety. In lieu of actual medical records, University Safety will maintain the medical clearance form as provided by the medical authority. Records will be maintained in accordance with the regulatory mandates and the University's policies.

Voluntary Program. When the determination has been made that respiratory protection is not required or necessary for their employment, an employee still has the right to wear a personal respirator once the individual signs a release form.

Reference:

29 CFR 1910.134 Respiratory Protection Standard