GENERAL SAFETY RULES
<table>
<thead>
<tr>
<th>TABLE OF CONTENTS</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Safety Policy Statement</td>
<td>3</td>
</tr>
<tr>
<td>General Safety Rules</td>
<td>4</td>
</tr>
<tr>
<td>Pesticide Handling &amp; Application</td>
<td>6</td>
</tr>
<tr>
<td>Cart / Utility Vehicle Operation</td>
<td>7</td>
</tr>
<tr>
<td>Electrical Safety</td>
<td>9</td>
</tr>
<tr>
<td>Pool / Chlorine Use &amp; Application</td>
<td>10</td>
</tr>
<tr>
<td>Lawn Safety</td>
<td>11</td>
</tr>
<tr>
<td>General Office Safety</td>
<td>14</td>
</tr>
<tr>
<td>State Fleet</td>
<td>19</td>
</tr>
<tr>
<td>Heavy Equipment Safety</td>
<td>20</td>
</tr>
<tr>
<td>Facilities Services Safety</td>
<td>22</td>
</tr>
<tr>
<td>Snow Removal</td>
<td>27</td>
</tr>
<tr>
<td>Power House Safety</td>
<td>29</td>
</tr>
<tr>
<td>Weather / Body Stress</td>
<td>30</td>
</tr>
</tbody>
</table>
SAFETY POLICY STATEMENT

Valley City State University places the safety and well being of its students, faculty, staff and visitors above all other considerations. It is the policy of VCSU to provide and maintain safe and healthful working conditions. All faculty, supervisors, staff and other persons in authority are enjoined in the prevention of accidents and reduction of claims in the environment and operations under their control. Valley City State University subscribes to the recognized national standards of safety as defined in published materials of the North Dakota Workforce Safety and Insurance Risk Management, the State Fire Laws, and the Federal Occupational Safety and Health Act (OSHA). The Office of the Chief Facilities Officer has been assigned the responsibility of administering the University's Safety and Risk Management Program.

Dr. Ellen Chaffee, President
Valley City State University
GENERAL SAFETY RULES

VCSU’s General Safety Rules are considered minimum safety standards for usual work conditions and shall be adhered to by all who enter the VCSU workplace. All employees must be fully aware of the expectations of management regarding proper job performance. Special instructions and introductions of all loss control/safety rules and regulations must be made during the following critical periods.

- General safety rules will be reviewed during general orientation.
- Department rules shall be reviewed during the first day the employee is on the job.
- Rules should be reviewed annually and posted in each department.

The following written General Safety Rules shall be posted in a conspicuous manner at fixed worksites and where possible in remote mobile locations. All personnel shall adhere to the following:

1. Participate in baseline training and continuing education which is conducted on a departmental level; major programs included are:
   - General Safety Rules
   - Claims Management and Incident Reporting
   - Substance Abuse Program
   - Basic Principles of Ergonomics
   - Housekeeping, Slips, Trips, and Falls
   - Electrical Safety
   - Computer Security
   - Material Handling
   - Departmental Safety Policies and Procedures
   - Fire and Evacuation Procedures

2. Report all accidents, injuries, near misses or safety hazards in the workplace immediately to your supervisor (24 hr reporting requirement). Remember the Designated Medical Provider requirement.

3. Immediately report all faulty electrical equipment to Facilities Services 3-7705. Faulty electrical equipment will be removed from service until the equipment has been repaired or replaced.

4. Immediately report any dangerous situations or equipment to appropriate maintenance personnel or to Facilities Services 3-7705 or the VC Police (845-3110).

5. Ask and insist on sufficient help before lifting or moving heavy objects. Follow proper procedure when

6. lifting - bend knees and keep back erect, lift with weight close to the body and do not twist while lifting. Use mechanical devices!

7. Always wear your safety belt when driving any VCSU leased/owned vehicle and comply with CDL requirements, if specific to your job position.

8. Always wear your appropriate personal protective equipment in accordance with the job operation that you are performing. This is a mandatory requirement and the responsibility of each department.

9. Participate in proper housekeeping. This is mandatory in all departments.
10. Comply with the Drug and Alcohol Policy as set forth by University System Policy.
11. “No Smoking” in any VCSU facility or designated areas.
12. In the event of a fire, sound the alarm and evacuate the building. Each building and department will have a Fire Procedure for review of exits and alarms. Stairways, aisles, and doorways are also to be maintained in compliance with building safety and fire codes.
13. Chemicals and other hazardous substances shall only be used by person’s familiar with and trained in the hazardous characteristics.
14. All small appliances and hand tools are to be kept in good working order and inspected regularly for signs of wear and inappropriate use.
15. Stairways, aisles, and doorways are to be maintained in compliance with building safety and fire codes.
16. Proper height devices, such as ladders, scaffolds or stools, will be used. When appropriate, seek assistance of a second.
PESTICIDE HANDLING & APPLICATION

The EPA Worker Protection Standard (WPS) for agricultural pesticides became effect on April 15, 1994. This standard requires certification to apply any fertilizer, weed chemical, or other chemicals to lawns, parks, and athletic fields. ND Health Department requires record keeping of spraying and chemicals used, and has strict safety guidelines.

The book, “THE WORKER PROTECTION STANDARD FOR AGRICULTURAL PESTICIDES - HOW TO COMPLY. WHAT EMPLOYERS NEED TO KNOW” contains more detailed information on the WPS requirements and explains the exemptions that may apply to your or your operation.

The final source of Worker Protection Standard information is the pesticide label.

The information provided is the maximum WPS requirements.

The WPS affects only products that bear revised WPS labeling. All products covered by the WPS must bear WPS labeling when sold or distributed by anyone. Check the pesticide label to determine if the pesticide is covered by the WPS Standard.

Products covered by the WPS will contain a section in the Directions for Use portion of the label that has the heading “Agricultural Use Requirements”. Under the Agricultural Use Requirements heading will be directions to comply with WPS, and its requirements for training, decontamination, notification, and emergency assistance to employees, restricted entry intervals, and personal protective equipment instructions.

It is a violation of Federal law to use this type of product in a manner inconsistent with its labeling.

VCSU requires employees who use fertilizer and pesticides to become certified pesticide applicators.
CART / UTILITY VEHICLE OPERATION

All members of the University community are governed by this procedure (students, staff, faculty and contractors/vendors). All operators of carts/gators must meet the following criteria before operating a cart/gator on property under the jurisdiction of the Valley City State University.

- Possess a valid North Dakota driver's license.
- Know and adhere to the State of North Dakota motor vehicle laws.

The safe operation of carts is paramount. Failure to follow this procedure, render common practices or courtesies, or follow rules of the road for the State of North Dakota, could result in citation, appropriate disciplinary action, and/or suspension of operator's vehicle driving privileges.

The following outlines procedures for the safe operation of carts/gators:

1. Supervisors must monitor and ensure that all persons operating carts have been instructed in the safe operation of carts.
2. The speed limit for carts off standard roadways is 15 mph.
3. Vehicles meeting Standard 500 criteria may operate on University roadways, but must adhere to posted speed limits on University roadways. All other carts/gators are prohibited from operating on the roadways of the campus except when crossing from one side of the street to another or utilizing a roadway where no sidewalk exists. In most cases, sidewalks are to be used while right-of-way is to be rendered to all pedestrians. Note: Operators are to use due caution in crosswalks. Carts/gators using pedestrian crosswalks do not have the right-of-way.
4. Modification or tampering with a vehicle’s governor is prohibited and is a violation of Federal Law.
5. The operator must report any accidents to the Facilities Services office and Risk Management Coordinator.
6. Operators are to use extreme caution at all times.
7. Operators may not wear headsets while operating carts.
8. Operators are prohibited from operating vehicles inside, under, or through the confines of University buildings.
9. Pedestrians have the right-of-way on campus. Carts must yield to pedestrians on sidewalks. SPEED IS TO BE REDUCED TO A MINIMUM WHEN DRIVING ALONG OR CROSSING SIDEWALKS SO AS TO AVOID ACCIDENTS WITH PEDESTRIANS.
10. Operators are to be diligent and pay particular attention to the needs of disabled persons, as limitations in vision, hearing or mobility may impair their ability to see, hear, or move out of the way of carts.
11. Operators are responsible for ignition keys for the period of time in which they are using the vehicle. Keys shall not be left in carts.
12. Operators must park carts/gators away from heavily traveled pedestrian areas or in designated cart parking areas.
13. Operators are not to block the path nor limit pedestrian access on walkways.
14. University-owned carts are to be used for University business only.
University-owned carts are to be maintained in accordance with manufacturer and Facilities Services's recommended service schedule.

Personally-owned carts/gators are prohibited from operating on University property. However, special consideration will be given to ADA accommodations.
ELECTRICAL SAFETY

Electrocution is one of the most common fatalities when working with and around electricity. Even if a person survives an electric shock, electrical burns, both internal and external, are extremely painful and can cause permanent disability. Electric shock can also cause involuntary muscle contractions causing a worker to fall off a ladder or scaffolding.

Electricity is an integral part of our every-day life, and sometimes we tend to take it for granted, not thinking about the potential danger.

Operation of Electrical Equipment
All electrical equipment is to be handled in a manner which will not cause damage. Preventative maintenance is necessary. Visually inspect all electrical equipment for the following before plugging in and using:
- Make sure electrical cords are free of cuts or nicks in the outer insulation.
- Make sure you are using the appropriate cord for the job and never lay a cord in an area where it could be damaged by vehicular or pedestrian traffic.
- Never unplug equipment by pulling the cord. Turn off the apparatus switch and then pull the plug from the receptacle.
- Be sure that all equipment is unplugged before you leave the work area.
- Examine the plug to be sure the protective insulation is present and intact, and that all the prongs are present and not loose.
- When plugging in the equipment, be sure the plug is correctly seated in the receptacle.
- Check all tools and equipment for loose or visually damaged parts, switches, shielding, nuts, bolts, etc.
- Do not use damaged, defective, or equipment that does not operate. Disconnect the plug, remove the damaged equipment from service and report any defects to your supervisor.
- Tools should be left to dry after a temperature change - moisture may condensate on the inside of the case and cause electrical shock if touched. If any shock sensation is felt when using the equipment, immediately shut it off, unplug it, and inform your supervisor.
- Inspect the receptacle before plugging in an electrical cord. Check for burn marks, cracks, broken insulation, missing or loose cover plates, and defects. Do not use the receptacle and notify your supervisor immediately.
- When your job is complete, recheck the tool/equipment to be sure it is ready for the next operator.
POOL/CHLORINE USE & APPLICATION

Chlorine, a non-flammable gas, liquefied under pressure, is an effective agent that controls bacterial growth. It is used as a disinfectant and algicide in municipal water supplies, sewage and water management plants, and in commercial and industrial swimming pools. It is used as a slimicide in water cooling systems and in paper mills.

Information
- Chlorine gas is a respiratory irritant which affects the mucous membranes. It can be detected as an odor at 3.5 ppm and can be fatal after a few breaths at 1000 ppm.
- Maximum air concentrations should not exceed 1 ppm for prolonged exposure.
- Chlorine gas should only be used in well ventilated areas so that any leaking gas cannot concentrate.
- If chlorine is inhaled - move to fresh air. If breathing is difficult, give oxygen, preferably with a physician’s advice. Seek immediate medical attention.
- Chlorine is corrosive to eyes, skin and mucous membranes in the presence of moisture.
- In case of skin contact, immediately flush all affected areas with large amounts of running water for at least 15 minutes while removing contaminated clothing and shoes. Seek medical attention.
- In case of contact with eyes, hold eyelids apart during the flushing to ensure rinsing of the entire surface of the eye and lids with water. Continue to flush with large amounts of water for at least 15 minutes. Seek medical attention.
- Keep chlorine away from intense heat or open sunlight. Storage should be in a dry area away from sources of heat, sunlight and precipitation.
- Chlorine should be kept separate from other compressed gases and never stored near hydrocarbons, metals, turpentine, either anhydrous ammonia or other flammable materials.
- All storage containers must have a weather resistant label attached near the outlet valve and must be accessible to the general public.
- All chlorine containers are returnable. Return them promptly to the supplier according to instructions.
- Never leave a container or cylinder valve open when chlorine is not being used. All cylinder valves must be closed tight and closure or caps secured.
- Use only valves, gauges, regulators, fittings, piping, etc. recommended for chlorine service.
- Never tamper with the cylinders or attempt to alter or repair containers/cylinders or valves.
- Notify the chlorine supplier promptly of damaged containers/cylinders.
- Liquid sodium hypochlorite is most commonly used as laundry bleach and is still considered and irritant to the skin, eyes, and inhaled.
- Chlorine is toxic to fish and aquatic organisms. Do not discharge waste containing this product into lakes, streams, ponds, or other waters except when in accordance with local, state, and federal regulations.

PERSONAL PROTECTIVE EQUIPMENT SHALL BE MANDATORY WHEN IN THE PRESENCE OF CHLORINE.
LAWN SAFETY

Gardening tools and mechanical lawn care devices, such as lawn mowers, power blowers, and chain saws, present special safety concerns

Common Landscaping Accidents:
- Cuts, lacerations, or amputations from whirling mower blades.
- Bruises or broken bones from flying projectiles.
- Burns from hot equipment parts.
- Electrical shock from faulty grounding or defective electrical cords.
- Eye injuries
- Back strain from improper equipment usage.
- Slips, trips, and falls.

Regardless of the type of landscape equipment you use, follow these basic guidelines to ensure optimum safety:
- Read the equipment owner's manual.
- Supervisor will train all student and part-time employees proper equipment operation, safety, and environmental hazards.
- Use the right equipment for the job at hand.
- Inspect the equipment before each use.
- Know how to control and stop the equipment quickly.
- You shall wear personal protection equipment, as necessary and required.
- Eye and Hearing protection is required if needed.
- You shall wear long pants, sturdy shoes and work gloves.
- Apply sunscreen to exposed areas of skin.
- Avoid fatigue and heat stress.
- Drink plenty of water and take breaks.
- Do not operate powered equipment if you are tired, sick, or taking medication.
- Take special precautions when working with electrical equipment. If you are using an extension cord, take care not to accidentally cut it.
- Do not smoke around gas-powered equipment. Allow hot equipment to cool before refueling.
- Make sure that all guards are in place and in good condition.
- Absolutely No Horseplay allowed.
- Maintain equipment and keep in good repair.
- Lock-out/Tagout equipment while out of service and in need of repair.
- While filling portable fuel cans, remove from the vehicle and place cans on ground surface.

IMPORTANT:
Keep pedestrians and bystanders at least 30 feet away when using powered equipment. Be aware of your surroundings at all times.

Hand Tools
- Keep hand tools in good condition. Replace split or rotten handles. Keep blades sharp.
Use tools that fit your needs and your build. For example, if you are tall, choose tools with handles that are long enough to prevent you from stooping over your work.

Never leave a rake, shovel, or hoe on the ground facing up. Foot injuries and/or head injuries can occur from handles that pop up unexpectedly.

**Mower Safety**
- To avoid injury with power mower equipment, you must pay close attention to your surroundings.
- Conduct a pre-mowing inspection of the lawn and remove any debris, rocks, limbs, or other items that could become a projectile. Look for concealed hazards such as holes.
- Keep hands and feet away from moving blades.
- Fill the tank with gas before beginning work. (By filling the tank initially, you can avoid having to fill the tank later when it is hot.)
- Shut off the engine before unclogging, servicing, or adjusting the mower and before removing the grass bag.

**Riding Lawn Mowers**
- Before starting the engine, make sure the transmission is out of gear and the mower blade clutch is disengaged.
- Never allow extra riders on the lawn mower.
- Slow down when turning and when working on slopes. Mow up and down slopes rather than across them.
- Always look behind you before backing.
- If you hit a large rock or stump, stop the mower and inspect the blades and shaft. Replace damaged blades.
- Never leave a running lawn mower unattended. Before leaving the seat, park the mower on a flat area, disengage the mower blades, and remove the ignition key.

**Walk-Behind Mowers**
- Wear sturdy shoes with good traction. Never wear sandals around walk-behind mowers.
- Do not bypass the safety device that stops the blade when the operator releases his/her grip on the handle.
- Mow across slopes rather than up and down slopes.
- Work slowly and patiently when mowing tall grass or tough weeds. Forcing the mower may cause repeated clogs and engine stalls.
- Never leave a running mower unattended. If you stop momentarily, cut the throttle to idle and make sure the mower will not roll away.

**Chain Saw Safety**
Chain saws are ideal for trimming trees and cutting fallen limbs into smaller pieces. Unfortunately, chain saws are associated with many serious injuries each year. Common chain saw hazards include the following:
- Chain cuts; Falling trees and limbs; Strains and sprains; Burns
- To avoid injury, you must respect chain saw hazards and handle chain saws skillfully
- Must go through training and have documentation before using a chain saw.
- Stay alert while sawing. Most injuries occur below the waist when the operator is not paying attention.
- Do not use a chain saw alone. Have someone else stand nearby in case of an emergency.
- Choose and inspect your chain saw carefully.
- Use the correct size chain saw for the job at hand.
- Ensure that the chain is sharp and the tension is taut.
- Ensure that smaller chain saws have a safety tip to prevent kickbacks. (Kickbacks cause one third of all chain saw injuries.)
- Wear a hard hat to protect you from falling limbs.
- Wear leg chaps, gloves and eye protection.
- Always operate a chain saw with two hands.
- Limbs that are at shoulder height or higher present a special safety problem. Use a ladder so the saw is at a lower and safer position relative to your body.
- Never allow the tip of a running chain saw to touch the ground. This could cause a serious kickback injury.
- To avoid kickback injuries, stand to the side of a running chain saw. Do not stand directly behind it.
- Move brush and limbs as you work to maintain a clear operating area.
- Never force a chain saw through a limb.
- Never stand on a log or limb while cutting it.

**Power Blowers**
- Because power leaf blowers produce air gusts up to 200 mph, you must follow all manufacturers safety precautions.
- Always walk towards your work when using a power leaf blower. Do not back away from your work.
- Be aware of pedestrians or others in the area.
- Wear safety goggles.

**Trimming Equipment**
- Wear safety goggles.
- Avoid touching rocks, debris, and gravel with trimming equipment. These items could cause a serious injury if a kickback occurs.
- Make sure all screws and chains are tight. Vibrating equipment can cause screws to loosen.
- Walk towards your work. Do not back away from your work when using a trimmer.
- If using electric trimmers, keep extension cords clear of blades.
GENERAL OFFICE SAFETY

A large percentage of workplace accidents and injuries occur in offices. Like the shop or laboratory, the office requires preventive measures to ensure a safe and healthy environment. Common causes of office accidents include the following:

- Slipping, tripping, and falling hazards
- Burning, cutting, and pinching hazards
- Improper lifting and handling techniques
- Failure to remain attentive and follow procedures
- Improper office layout and arrangement
- Dangerous electrical wiring and cords
- Exposure to toxic substances
- Horseplay
- Lack of training

Depending on the office situation and hazards involved, specific training may be needed on chemical hazards, machine guarding, ergonomics, etc. For more information on training requirements and methods, contact your supervisor or VCSU’s Risk Management Coordinator at 3-7705.

The following sections address several office safety practices. Other preventive measures not mentioned here might be necessary also.

Good Housekeeping Practices

Many office accidents are caused by insufficient housekeeping practices. By keeping the office floor both neat and clean, you can eliminate most slipping, tripping, and falling hazards. Other good housekeeping practices include the following:

- Ensure that office lighting is adequate. Replace burned out light bulbs and have additional lighting installed, as necessary.
- Ensure that electrical cords and phone cords do not cross walkways or otherwise pose a tripping hazard. If you cannot move a cord, have a new outlet installed or secure the cord to the floor with cord covering strips. Do not run cords underneath carpet, and avoid the use of tape.
- Report or repair tripping hazards such as defective tiles, boards, or carpet immediately.
- Clean spills and pick up fallen debris immediately. Even simple items such as a loose pencil could cause a serious falling injury.
- Keep office equipment, facilities, and machines in good, clean condition.
- Store items in an approved storage space. Take care to not stack boxes too high or too tight. Clearly label boxes with their contents.
- Keep all drawers and cupboard doors closed when unattended.

Chemical Hazards

Many common office chemicals can cause injuries if improperly used, stored, or disposed. Some common office chemicals include: cleaning agents, glues, correction fluid, inks, and toners. To guarantee the safe use, storage, and disposal of the chemicals in your office,
always review the Material Safety Data Sheet (MSDS) and/or container label for important information.

**Cuts and Punctures**
Cuts and punctures happen when people use everyday office supplies without exercising care. Follow these guidelines to help reduce the chance for cuts and punctures:
- When sealing envelopes, use a liquid dispenser, not your tongue.
- Be careful when using kitchen knives, scissors, staplers, letter openers, and box openers. Any of these items could cause a serious injury.
- Do not pick up broken glass with your bare hands. Wear gloves and use a broom and a dustpan.
- Place used blades, broken glass, or other sharp objects in a rigid container, such as a box, before disposing in a wastebasket.

**Equipment Safety**
Only use machines that you know how to operate. Never attempt to operate an unfamiliar machine without reading the machine instructions or receiving directions from a qualified person. In addition, follow these guidelines to ensure machine safety:
- Secure machines that tend to unexpectedly move during operation.
- Do not place machines near the edge of a table or desk.
- Ensure that machines with moving parts are guarded to prevent accidents. Do not remove these guards.
- Unplug defective machines, place "Out of Order" signs on them, and have them repaired immediately.
- Do not use any machine that smokes, sparks, shocks, or appears defective.
- Close hand-operated paper cutters after each use.
- Take care when working with copying machines. If you have to open the machine for maintenance, repair, or troubleshooting, remember that some parts may be hot. Always follow the manufacturer's instructions for troubleshooting.
- Unplug paper shredders before conducting maintenance, repair, or troubleshooting. Some items can be very dangerous when worn around machinery with moving parts. Avoid wearing the following items around machines with moving parts:
  - Loose belts
  - Jewelry
  - Long, loose hair
  - Long, loose sleeves or pants
  - Scarves
  - Ties

**File Cabinets and Shelves**
Because file cabinets and shelves tend to support heavy loads, treat them with special care. Follow these safety guidelines for file cabinets:
- Secure file cabinets that are not weighted at the bottom.
- Ensure that file cabinet drawers cannot easily be pulled clear of the cabinet.
- Do not block room ventilation grates with file cabinets.
- Open only one drawer at a time to keep the cabinet from toppling.
Close drawers when they are not in use.
Do not place heavy objects on top of cabinets. Be aware that anything on top of a cabinet may fall off if a drawer is opened suddenly.
Close drawers slowly using the handle to avoid pinched fingers.
Keep the bottom drawer full. This will help stabilize the entire cabinet. In addition, follow these safety guidelines for office shelves:
Ensure shelves are secured.
Place heavy objects on the bottom shelves. This will keep the entire structure more stable.
Maintain 18 inches between top shelf items and the plane of the fire suppression sprinkler heads. In non-sprinkler areas, 24 inches must be maintained from top shelf items and the ceiling.
Do not block room ventilation grates with shelves.
Never climb on shelves (even lower shelves). Use an approved ladder or stepstool.

Desks
Follow these safety guidelines for office desks:
Keep desks in good condition (i.e., free from sharp edges, nails, etc)
Ensure that desks do not block exits or passageways.
Ensure that glass-top desks do not have sharp edges.
Ensure that desks with spring-loaded tables function properly. The table should not spring forth with enough force to cause an injury.
Do not climb on desks. Use an approved ladder or stepstool.
Keep desk drawers closed when not in use.
Repair or report any desk damage that could be hazardous.

Chairs
Safety guidelines for office chairs include the following:
Do not lean back in office chairs, particularly swivel chairs with rollers.
Never climb on a chair. Use an approved ladder or stepstool.
Office desk chairs should have adjustable back supports and seat height. Make sure that your chair's back support position and seat height are comfortable.
Take care when sitting in a chair with rollers. Make sure it does not roll out from under you when you sit down.
Repair or report any chair damage that could be hazardous.
Do not roll chairs over electrical cords.

Ladders and Stepstools
Always use an approved ladder or stepstool to reach any item above your extended arm height. Never use a makeshift device, such as a desktop, file cabinet, bookshelf, chair or box, as a substitute for a ladder or stepstool.
Follow these guidelines when using ladders/stepstools:
Do not load ladders or stepstools above their intended capacity.
Place ladders or stepstools on slip-free surfaces even if they have slip-resistant feet.
Avoid placing ladders or stepstools in walkways, and never place them in front of a door, unless the door is locked and barricaded.
Conduct safety check of ladder periodically to ensure it is structurally sound and in good repair.
- Remove ladders with missing or broken parts.

**Slips, Trips, and Falls**
The easiest way to avoid slips, trips, and falls is to pay attention to your surroundings and to avoid running or rushing. Additionally, you can improve the flow of office traffic by following these guidelines:
- Arrange office furnishings in a manner that provides unobstructed areas for movement.
- Keep stairs, steps, flooring, and carpeting well maintained.
- Ensure that glass doors have some type of marking to keep people from walking through, or into, them.
- Clearly mark any difference in floor level that could cause an accident.
- Secure throw rugs and mats.
- Do not place wastebaskets or other objects in walkways.
- Close file drawers when you leave the cabinet.
- Wear proper footwear, slow down and pay attention to your surroundings.
- Properly place handrails in accordance with specific standards.
- Walk, do not run or rush up or down stairs.

**Preventing Stress**
To reduce stress and prevent fatigue, it is important to take mini-breaks throughout the day. If possible, change tasks at least once every two hours. Stretch your arms, neck, and legs often if you do the same type of work for long periods of time. Rest your eyes often by closing them or looking at something other than the work at hand. For a quick pick-me-up, breathe deeply several times by inhaling through your nose and exhaling through your mouth. In addition, try eating your lunch somewhere other than at your desk.

**Ergonomics and Work Station Arrangements**
Ergonomics involves adjusting work processes or stations to fit a particular employee. Improper ergonomic design can cause debilitating long-term musculoskeletal effects. Suggestions for maintaining an ergonomic work atmosphere:
- Stay in good physical condition.
- Take "mini" breaks and stretch intermittently in both sitting and standing positions.
- Change tasks frequently.
- Adjust your computer screen to limit glare and take frequent vision breaks away from your computer to allow your eyes to fully relax. Periodically gazing across the room or out a window will help the eye muscles rest and receive oxygenated blood.
- Keep items frequently used in close proximity to you.
- Maintain good posture and use a chair with adequate support to adjust your upper extremities to a neutral position.
- Be aware of cumulative trauma disorder warning signs such as tingling, numbness or burning pain in fingers, hands, arms, wrists and shoulders.
- Report any symptoms to your supervisor immediately and request an Ergonomic Assessment contact the VCSU Risk Management Coordinator 3-7705.

**Space Heaters**
The use of portable electric space heaters should always be a last resort. If your workspace is too cold, your first action should always be to report the problem to the Facilities Services at 3-7705. **Facilities Services has to check the space heaters for UL listing and proper use.**

When necessary, the use of portable electric space heaters is allowed in University buildings. When used improperly though, space heaters are an accident waiting to happen.

They can cause fires, electric shocks, and can reduce oxygen levels. Fuel fired space heaters (e.g., natural gas, kerosene, propane, fuel oil, etc.) are prohibited in office settings. The following apply when using portable electric space heaters:

- Use only for the purpose for which they are designed (refer to manufacturer's labeling and recommendations)
- The space heater must have devices that automatically turn it off if tipped over and when the room is warmed.
- Keep the heater in a stable, upright position with at least 30 inches of space between the front of the unit and any other surface.
- Never operate the heater in a closed area, such as beneath furniture, in cabinets, beneath/behind curtains, drapes, or other combustibles (i.e., paper, cardboard, etc.). Never hang a portable heater from a wall or ceiling.
- Check the cord to make sure it is not frayed or worn.
- Always plug heater into a surge protector or its own outlet.
- Always unplug heaters when they are not in use.
- Do not overload electrical circuits.
- Never touch an electric heater if your hands are wet or if you are in contact with water.

For any further questions regarding the use of portable electric space heaters, contact Facilities Services at 3-7705.

**Candles**
- Candles are prohibited in VCSU buildings.
STATE FLEET

Only state employees and individual approved students are defined as operators under the following. Vehicles are defined as all licensed motor vehicles owned and leased by the state subject to registration under Chapters 39-04 and 39-05 NDCC.

By law, every state agency, institution, department, board, bureau, and commission unless exempted by the director must use the system.

Each agency is responsible for the actions of its authorized drivers and must institute proper disciplinary actions for violating the regulations.

North Dakota State Fleet Services Regulations are available online at the web site, and the printed manuals are in every State Fleet vehicle.

Defensive driving saves lives, time, and money in spite of the conditions and the actions of others. Collisions may be prevented by doing everything reasonable to avoid them. All State Fleet vehicle operators are required to complete the four-hour National Safety Council Defensive Driving Course at least every four years. Employees who wish, however, can seek permission from their supervisor to take it as frequently as every two years. If supervisors are unwilling to give leave time more than once every four years, employees could still choose to take vacation time or attend a night Defensive Driving Course.

Contact VCSU’s Risk Management Coordinator to register for Defensive Driving.
HEAVY EQUIPMENT SAFETY

When using heavy equipment, there are some basic guidelines that need to be followed to ensure safety:
- Operators of heavy equipment must have appropriate training and/or licenses before operating.
- Know how to properly operate the equipment you are using. If you do not have instructions, contact the manufacturer.
- Know the proper use and limitations of the machinery you are operating.
- Match machinery with equipment of same power and speed levels to prevent machine failure and possible injury.
- Match the equipment used to the task at hand.
- Never ride in or on loader bucket. No riders allowed on Bobcat.
- Notify your supervisor when you are sick, fatigued, or taking medication that may affect your ability to safely operate machinery.

Utilize safety features and heed the manufacturer's warnings:
- Safety features such as kill switches, guards, shields, reverse alarms, roll bars, or control bars must not be modified or removed.
- Utilize runners and chain guards on mowers.
- Keep power transmission shafts covered.
- Shield power takeoff shafts properly.
- Disengage and turn power supply off to all power takeoffs, blades, cutterbars, crimper rolls, or other moving parts before handling equipment.
- Do not use hands to clear jammed equipment.
- Keep hands and feet clear of moving parts.
- Inspect controls and parts for loose nuts and bolts before each use.
- Avoid working alone. Use the "buddy system". Your buddy will be able to get help immediately in case of an accident.
- NEVER allow children to operate equipment, ride double, or play near operating equipment.
- Remove or secure loose or baggy clothing and long hair. It can be dragged into machinery.
- Never get on or off moving equipment.

Be aware of area and terrain:
- Stumps, rocks, and hidden debris can cause overturns.
- Low tree limbs can knock an operator off equipment.
- Inspect banks and slopes for stability.
- On steep slopes, plan path of travel downhill.
- Wet or icy surfaces reduce traction.
- Never take shortcuts.

Ensure the following before leaving equipment unattended:
- All elevated work surfaces such as buckets and lifts are lowered.
- All moving parts are disengaged and their motion has stopped.
- Transmission is in appropriate parking position.
- Engine is off, or vehicle is secure.
- Equipment is secure against movement.
- Do not attempt to lubricate or adjust a running engine.
- Turn the engine off before refueling.
- Check the work area for underground utilities and overhead power lines prior to beginning work.

**Bobcat / Loaders**

Refer to the product documentation that accompanied your equipment for more information and specific instructions. Bobcat has provided a training video available at the Facilities Services office, or online at: [http://www.bobcat.com/trainings/safety/safety_videos](http://www.bobcat.com/trainings/safety/safety_videos)
Facilities Services Safety

Housekeeping
Poor housekeeping is a major contributor to occupational injuries and illness. Housekeeping encompasses all activities related to the cleanliness of University facilities, materials, and equipment, as well as the elimination of nonessential materials and hazardous conditions. All University employees must work towards maintaining their respective workplace in a clean and orderly manner.

Good housekeeping guidelines include keeping aisles and stairways free from clutter, cleaning spills, minimizing combustibles in workplace and storage areas, and keeping all exits free from obstructions. Access to emergency equipment, such as fire extinguishers, pull stations, eye wash units, showers, etc., must be maintained free and clear of obstructions.

Lifting
Using good judgment is the key to safely lifting objects. If the object is too heavy to lift, seek assistance or use mechanical equipment to move the object.

When lifting heavy objects, follow these guidelines to ensure your safety:
- Face and stand as close as possible to the object with feet wide apart and with good footing.
- Bend at the knees, keeping the back as straight as possible.
- Get a firm, balanced grip on the object and pull it in towards you, keeping the center of gravity of the object close to you.
- Keeping your back as straight as possible, make the lift smoothly and under control as you begin straightening your legs.
- When moving the object, keep the load evenly balanced and proceed with caution through doors and around corners.
- Avoid twisting your body while lifting, moving, or setting down an object.

Removing objects from overhead storage also requires special attention. Before bringing an object down from above, test its weight by pushing up on it. If the only way you can reach an object is by standing on the tips of your toes and reaching way over your head, do not move the object. If the object is too high, use a ladder or other appropriate means to safely reach it.

Shop Safety
It is not possible to detail all the risks involved with shop work. However, it is possible to foresee many hazards by carefully planning each job. To prevent accidents, utilize your knowledge, training, and common sense. Evaluate potential sources of injury, and attempt to eliminate hazards. Follow these guidelines for general shop safety:

Know the hazards associated with your work.
- Be sure you are fully educated on the proper use and operation of any tool before beginning a job.
- Always wear appropriate safety gear and protective clothing.
• Ensure that there is adequate ventilation to prevent over-exposure from vapors, dust, and fumes.
• Maintain good housekeeping standards.
• Keep the work area free from slipping/tripping hazards (oil, cords, debris, etc.).
• All spills must be cleaned immediately.
• Remove sawdust, wood chips, and metal chips regularly.
• Keep tool and equipment guards in place.
• Know where fire extinguishers are located and how to use them. Do not obstruct them.
• Make sure all tools and equipment are properly grounded and that cords are in good condition.
• Double-insulated tools or those with three-wire cords are essential for safety.
• Use extension cords that are large enough for the load and distance.
• Secure all compressed gas cylinders.
• Never use compressed air to clean clothing or skin.
• Always use flashback arrestors on cutting/welding torches.
• Take precautions against heat stroke and heat exhaustion.
• Wear infrared safety goggles when appropriate.

Fall Protection
OSHA fall protection requirements vary between general industry and construction standards. OSHA general industry standards require fall protection at four feet, while construction standards require protection at six feet.

Protection against falls must be provided when working on elevated surfaces or when adjacent to a lower level when a four foot or more fall hazard exists. Fall arresting systems are often used when fall hazards cannot be controlled by guardrails, floors, nets, and other means.

Personal fall arrest systems are used to stop someone in a fall. Personal fall arrest systems consist of an anchorage, connectors, a body harness, and may include a lanyard, deceleration device, lifeline, or suitable combinations of these items. These systems are designed to stop a free fall of up to four feet while limiting the forces imposed on the wearer.

Fall protection must be considered whenever work is performed in an area four feet above its surroundings. Fall protection must be provided through the use of guardrail systems, safety net systems, or personal fall arrest systems. Where it can be clearly demonstrated that the use of these systems is infeasible or creates a greater hazard, a fall protection program that provides for alternative fall protection measures may be implemented.

Work surfaces should be kept clear of material and debris.

Ramps, runways, and other walkways must be guarded to prevent individuals from falling four feet or more. Some ramps, runways, or walkways may require more stringent guarding as required by applicable codes.

Hand Tools/ Power Tools
Hand tools are non-powered. They include anything from axes to wrenches. The greatest hazards posed by hand tools results from misuse and improper maintenance.

When using hand tools, the following apply:
- Use the right tool to complete a job safely and efficiently.
- Wear appropriate protective equipment.
- Make sure saw blades, knives, or other tools are directed away from aisle areas and other employees working in close proximity.
- When using knives, always cut away from your body.
- Keep knives and scissors sharp; dull tools can be more hazardous than sharp ones.
- Around flammable substances, use spark-resistant tools made from brass, plastic, aluminum, or wood.
- Replace or repair all wooden handles that are loose, splintered, or cracked.
- Do not use impact tools such as chisels, wedges, or drift pins that have mushroomed heads.
- Report any tools that are defective or in unsatisfactory condition to your supervisor.

**Power Tools**

Power tools can be extremely dangerous if they are used improperly. Common accidents associated with power tools include abrasions, cuts, lacerations, amputations, burns, electrocution, and broken bones.

When working around power tools, you must wear the necessary personal protective equipment and avoid wearing loose clothing or jewelry that could catch in moving machinery. In addition to the general shop guidelines, the following apply when working with power tools:
- Use the correct tool for the job. Do not use a tool or attachment for something it was not designed to do.
- Do not rely on strength to perform an operation. If undue force is necessary, you may be using the wrong tool or have a dull cutting edge.
- Select the correct bit, blade, cutter, or grinder wheel for the material at hand.
- Keep all guards in place. Cover exposed belts, pulleys, gears, and shafts that could cause injury.
- Always operate tools at the correct speed for the job at hand. Working too slowly can cause an accident just as easily as working too fast.
- Watch your work when operating power tools. Stop working if something distracts you.
- Before clearing jams, blockages, performing maintenance, or changing components on power tools, disconnect from power source or use appropriate lockout/tagout procedure.
- Do not use your hand to clear jams or blockages, use an appropriate tool.
- Never reach over equipment while it is running.
- Never disable or tamper with safety releases or other automatic switches.
- When the chance for operator injury exists, use a push stick to move material through a machine.
- Keep a firm grip on portable power tools. These tools tend to "get away" from operators and can be difficult to control.
- Remove chuck keys or adjusting tools prior to operation.
- Keep bystanders away from moving machinery.
When you are sick, fatigued, or taking medication that may affect your ability to safely operate power tools, please notify your supervisor.

When possible, secure work pieces with a clamp or vise to free the hands and minimize the chance of injury. Use a jig for pieces that are unstable or do not lie flat.

**Machinery and Machine Guarding**
Moving machine parts must be safeguarded to protect operators from serious injury. Belts, gears, shafts, pulleys, flywheels, chains, and other moving parts must be guarded if there is a chance they could come in contact with the operator or a bystander.

Hazardous areas that must be guarded include the following:
- Point of operation: Area where the machine either cuts, bends, molds, forms, or rotates.
- Pinch/nip point: Area where moving machine parts can trap, pinch, or crush (i.e., roller feeds, intermeshing gears, etc.).
- Sharp edges
- Stored potential energy
- Guards must be in place. If you notice that a guard is missing or damaged, contact your supervisor and have the guard replaced or repaired before beginning work.

**Welding, Cutting, and Brazing Guidelines**
The proper selection of personal protective equipment (PPE) is very important when performing hot work. Ensure that the eye protection used is sufficient for the work being performed. The following additional PPE should be considered as well: fireproof apron, fire resistant gauntlet gloves, leather leggings, leather cape or shoulder covers, and earplugs. Respiratory protection may be necessary when engineering controls fail to provide a safe atmosphere (see PPE-Respiratory Protection Program for details). Always take care to protect other people from the hazards of welding by using a welding curtain or other appropriate devices.

Common hazards associated with welding include the following:
- Electrocution
- Burns
- UV radiation exposure
- Oxygen depletion
- Sparking
- Toxic fumes
- Fire

Before welding, cutting, or brazing, inspect your equipment for the following:
- Welding leads must be completely insulated and in good condition.
- Cutting tools must be leak-free and equipped with proper fittings, gauges, regulators, and flashback devices.
- Oxygen and acetylene tanks must be secured in a safe place.
- Manufacturers' manuals are a good source of additional information.

The following items are guidelines to be used in most welding, cutting, and brazing procedures:
Conduct hot work operations in designated areas free from flammable or combustible materials.

When hot work is necessary in an undesigned or hazardous area, specialized safety procedures must be included in the departmental hot work plan.

Assign a crewmember whose sole responsibility is fire watch when other than a minor fire may develop, or if any of the following conditions exist:

- Appreciable combustible material exists in building construction or contents that are closer than 35 feet;
- Appreciable combustibles are more than 35 feet away but are easily ignited by sparks;
- Wall or floor openings within a 35-foot radius expose combustible material in adjacent areas; or
- Combustible materials are adjacent to the opposite side of metal partitions, wall, ceilings, or roofs and there is potential for them to be ignited by construction or radiation.

Periodically check the work area for a flammable atmosphere.

Take care to prevent sparks from starting a fire.

Remove unused gas cylinders from the hot work area.

Keep hoses out of doorways and away from other people. A flattened hose can cause a flashback.

Mark hot materials with a sign or other warning during hot work activities.

Make sure reflective or combustible surfaces in the hot work area are removed or adequately guarded.

Ensure that adequate ventilation and exhaust are available.

Be aware of electrocution hazards, particularly in damp conditions. Be sure that electrical cords are properly grounded. It is advisable for cords to pull down from an overhead pulley.

Gas welding and cutting tools are often fueled by oxygen and acetylene gas cylinders. These cylinders require special safety precautions to prevent explosions and serious injuries.

Follow the safety guidelines below, and refer to the Laboratory Safety section in this manual for more information on gas cylinder safety:

- Ensure that acetylene/oxygen systems are equipped with flame or flashback arrestors.
- Store oxygen and acetylene cylinders upright and secure them to a fixed object.
- Oxygen must be separated from cylinders containing flammable gases, and all other combustibles during storage.
- Keep cylinder fittings and hoses free from oil and grease.
- Repair defective hoses by proper splicing methods or replace them. Do not use tape.
- Do not tamper or attempt to repair cylinders, valves, or regulators.
- Do not interchange regulators or pressure gauges with other gas cylinders.
- Carefully purge hoses and torches before connecting a cylinder.
- Set acetylene pressure at or below 15 psig. Always use the minimum acceptable flowrate.
- To allow for rapid closing, never open the valve on an acetylene cylinder more than three-fourths of a turn.
- Never use a match to light a torch. Use an approved striker.
SNOW REMOVAL

Weather conditions dictate the callback and response of snow removal personnel. During normal school schedule, Facilities Services surveys the weather situations and campus conditions. Facilities Services removes snow and ice in a timely fashion when possible. During the weekend or holidays, Facilities’ Director determines the response of personnel.

Snow Blowlers / Sweepers
Personnel using snow blowlers/sweepers need to be aware of the hazards they present. All snow blowlers/sweepers are potentially dangerous to the uninformed, careless user. They contain a large, exposed mechanism designed to dig into the snow, making it difficult to provide safety through a guard system. However, with proper use, snow blowlers/sweepers offer a service that is safer than shoveling.

Operators must keep a careful watch for items hidden under the snow that could be picked up by the machine and discharged out of the machines chute. Please note that objects such as small pieces of ice, pebbles and debris will fly farther than snow.

The following safety suggestions can protect you and others while operating a snow blower/sweeper:
- Read the operator’s manual.
- Drive slowly
- Stop for pedestrians and vehicles
- Know the controls and how to stop the engine or throw the unit out of gear quickly.
- Disengage power and stop the motor before cleaning the discharge chute, removing obstacles, making adjustments or when leaving the operating position.
- Disengage all clutches and shift into neutral before starting the motor.
- Do not allow children or unqualified persons to operate the machine, and keep them safe distances away.
- Adjust height to clear gravel or crushed rock surface.
- Wear appropriate footwear, and exercise caution to avoid slipping or falling.
- Direct the discharge towards areas free from persons, buildings or vehicles.
- Keep the machine in good operating condition, do not modify the machine and keep safety devices and guards in place.

Shoveling
If the area to be cleared of snow is small, or if you do not have a snow blower, you will likely have to shovel by hand. Only persons in good physical condition and good general health should shovel.

When shoveling, mentally divide the area into sections and clean one part; then rest before going onto the next section. Whenever the snow begins to feel especially heavy, take a break. A few things to keep in mind when shoveling are:
- As with any moderate to strenuous activity, you should warm up before shoveling. Start by walking for a few minutes or marching in place. Stretch the muscles in your arms and legs, as warm muscles will work more efficiently and are less likely to be injured.
- Wet snow is much heavier than dry snow. Govern your shoveling accordingly.
- Push or sweep away as much of the snow as possible.
- Drink plenty of water. Dehydration is an issue in cold winter months just as it is in the summer.
- When shoveling, stand with your feet about hip width for balance and keep the shovel close to your body. Bend from the knees (not the back) and tighten your stomach muscles as you lift the snow. Avoid twisting movements. If you need to move the snow to one side, reposition your feet to face the direction the snow will be going.
- Wear appropriate footwear, and exercise caution to avoid slipping or falling.
- Make use of ice-melting materials to make the job as easy as possible. Make certain that the melting material is friendly to the environment and appropriate for the icy surface.
- Dress warmly while shoveling to protect against frostbite. Don’t bundle yourself up so heavily that it is hard to move.
- If you experience chest pain, weakness or other signs of physical distress, stop shoveling at once and seek medical attention.

**Snow Plows and Tractors**
Vehicles such as tractors, pick-ups and end loaders are frequently used with plow attachments for clearing snow from larger areas. Such vehicles must be equipped with a flashing beacon for visibility and those operating in pedestrian areas should be outfitted with reverse alarming. Operators of such plow equipment must be constantly aware of potential hazards existing under the blanket of snow.

Pedestrians should never assume that working personnel and the operators of heavy equipment are able to see you. Pay attention and try to establish eye contact whenever possible.

**Parking lots & Streets**
VCSU will clear sidewalks first then concentrate on parking lots. Parking lot snow removal will begin when snowfall stops. Valley City Public Works will clean the streets and alleys surrounding the campus via arrangement by Facilities Services Director and when possible.
POWER HOUSE SAFETY

Unloading coal
Moving coal from semi-trailers to the coal bin requires safe coordination between the semi driver and power house employees. Employees need to use caution when working around semi and equipment, as weather may cause problems.

Some tips to prevent injuries:
- Wear ear protection – high noise levels
- Gloves
- No loose clothing
- Keep clear of exposed areas of conveyor belts and augers
- Never go underneath semi
- Never step over conveyor belts when they are running

Pulling Ash
Power house employees must use extreme caution when pulling or dumping ash. Gloves are mandatory and respirators are highly suggested.
WEATHER / BODY STRESS

The thermal (heat or cold) stress of any given working situation is the combination of all of those factors which result in heat gains or losses relative to the body or which prevent the body’s temperature regulating mechanisms from working efficiently.

Heat Stress
People may suffer from heat stress during hot, humid conditions. To prevent heat stress, employees should limit strenuous physical activity during the hottest portion of the day, wear a brimmed hat when in the sun, take frequent breaks, and drink plenty of fluids. Heat stress occurs in two forms: heat exhaustion and heat stroke.

Heat Exhaustion
Heat exhaustion is usually caused by strenuous physical activity and hot, humid conditions. Because heat exhaustion is the body’s response to insufficient water and salt, it should be treated as quickly as possible.

Signs and symptoms of heat exhaustion include the following:
- Exhaustion and restlessness
- Headache
- Dizziness
- Nausea
- Cold, clammy, moist skin
- Pale face
- Cramps in abdomen and lower limbs
- Fast, shallow breathing
- Rapid, weak pulse
- Falling body temperature
- Fainting

Take the following steps to administer first aid for heat exhaustion:
- Have the victim lie down in a cool or shaded place.
- If the victim is conscious, have the victim slowly sip cool water, not cold water. If the victim is unconscious or is conscious but does not improve, seek medical aid as soon as possible.
- If the victim is sweating profusely, have the victim sip cool water that contains one teaspoon of table salt per pint of water.

Heat Stroke
Heat stroke is usually caused by exposure to extreme heat and humidity and/or a feverish illness. Heat stoke occurs when the body can no longer control its temperature by sweating. Heat stroke is extremely dangerous and may be fatal if not treated immediately.

The signs and symptoms of heat stroke include the following:
- Hot, dry skin
- Headache
- Dizziness
- High temperature
- Strong pulse
- Noisy breathing
- Unconsciousness

Immediately take the following steps to administer first aid for heat stroke:
- If possible, move the victim to a cool place.
- Seek medical attention immediately.
- Remove the victim’s clothing.
- If the victim is conscious, place the victim in a half-sitting position and support the head and shoulders. If unconscious, place the victim on the side with the head facing sideways.
- Fan the victim and sponge the body with cool water.

**Cold Stress**

When your body temperature drops even a few degrees below normal (which is about 98.6 degrees Fahrenheit), you can begin to shiver uncontrollably, become weak, drowsy, disoriented, unconscious, even fatally ill. This loss of body heat is known as “cold stress” or hypothermia. It is important that persons who work outdoors or in cold indoor environments (e.g. coal storage bunker, warehouses, etc.) learn about how to protect against hypothermia. The following guidelines can help you keep your body warm and avoid the dangerous consequences of hypothermia.

Outdoors, indoors, in mild weather or in cold, it pays to dress in layers. Layering your clothes allows you to adjust what you’re wearing to suit the temperature conditions. In cold weather, wear cotton, polypropylene, or lightweight wool next to the skin, and wool layers over your undergarments. In warm weather, stick to loose fitting, cotton clothing. For outdoor activities, choose outer garments made of waterproof, wind resistant fabrics such as nylon. And, since a great deal of body heat is lost through the head, always wear a hat for added protection.

Water chills your body far more rapidly than air or wind. Even in the heat of the summer, falling into a 40-degree lake can be fatal in a matter of minutes. Always take along a dry set of clothing whenever you are working outdoors. Wear waterproof boots in damp or snowy weather, and always pack raingear.

The effects of hypothermia can be gradual and often go unnoticed until it’s too late. If you know you’ll be outdoors for an extended period of time, take along a companion. (At the very least, let someone know where you’ll be and at what time you expect to return.) Ask your companion to check you frequently for overexposure to the cold—do the same for your companion. Check for shivering, slurred speech, mental confusion, drowsiness, and weakness. If either of you shows any of the above signs, get indoors as soon as possible and warm up.

The key ingredients to preventing loss of body heat are staying warm, and understanding what you can do to protect against conditions that can cause hypothermia. Hypothermia can be fatal, but it can be prevented.