Purpose

UAA strives to provide a safe and healthy environment for employees, students, contractors, and visitors. The objective of this policy is to protect employees from the risk of injury by creating a barrier against workplace hazards. The Occupational Safety and Health Administration (OSHA) requires (29CFR 1910.132) that employers assess the workplace to determine if work hazards exist that can be mitigated by the use of head, eye, face, hand, or foot protection. The assessment must be certified in writing. Employers must train their employees on when personal protective equipment (PPE) is necessary, how to wear it, its limitations, and how to care for it. This program primarily addresses eye, face, head, hand, and foot protection. However, there may be other hazards present that are covered under other regulations, policies and good work practices.

Personal protective equipment shall not be used as a substitute for engineering, work practice, and/or administrative controls. PPE shall be used in conjunction with these controls to provide for employee safety and health in the workplace. PPE includes all clothing and other work accessories designed to create a barrier against workplace hazards. PPE will be provided, used and maintained when it has been determined that its use is required and that such use will lessen the likelihood of occupational injury and/or illness.

Responsibilities

Supervisors have the primary responsibility for the development of their PPE Program consistent with this policy. The supervisor will conduct workplace hazard assessments to determine the presence of hazards, which necessitate the use of PPE. (Appendix 1) Supervisors will also be responsible for maintaining records of the assessments and training in PPE use, care, and cleaning. Modifications to hazard assessments will be made when new hazards are introduced or when processes are added or changed. Environmental Health and Safety staff are available to assist supervisors in workplace assessments, technical assistance and training.
Environmental Health and Safety will also periodically review, update, and evaluate the overall effectiveness of department PPE programs.

**Employee Responsibilities**

The PPE user is responsible for the following requirements of the PPE program:

- Wearing PPE as required
- Attending required training sessions
- Caring for, cleaning, and maintaining PPE as required
- Informing the supervisor of the need to repair or replace PPE

**Program Components**

Hazard Assessment and Equipment Selection: OSHA requires employers to conduct inspections of all workplaces to determine the need for PPE and to help in selecting the proper PPE for each task performed. The supervisor in conjunction with the environmental health & safety officer if requested will conduct a walk through survey of each work area to identify sources of hazards, including impact, penetration, compression, chemical, heat, dust, electrical sources, material handling, and light radiation (e.g., protective shade of filter lenses for arc welding) and other possible hazards. Each survey will be documented using the *Hazard Assessment Form* *(PDF or DOC)*, which identifies the workplace surveyed, the Person(s) conducting the survey, findings of potential hazards, and date of the survey. Once the hazards of the workplace have been identified, the supervisor and/or safety officer will determine the suitability of the PPE presently available and as necessary
select new or additional equipment which ensures a level of protection which meets or exceeds the minimum required to protect the employees from the hazards.

**Protective Devices**

All personal protective clothing and equipment will be of safe design and construction for the use of work to be performed and shall be maintained in a sanitary and reliable condition. Only those items of protective clothing and equipment that meet NIOSH (National Institute of Occupational Health and Safety) or ANSI (American National Standards Institute) or other appropriate professional organizations will be procured or accepted for use. The following ANSI standards have been incorporated into the OSHA PPE standards:

1. Eye and Face Protection ANSI Z87.1-1989
2. Head Protection ANSI Z89.1-1986
4. Hand Protection. There are no ANSI standards for gloves however Selection must be based on the performance characteristics of the glove in relation to the task performed.

Careful consideration will be given to comfort and fit of PPE in order to ensure that it will be used. Protective devices are generally available in a variety of sizes. Care should be taken to ensure that the right size is selected.
Costs

The university is committed to a policy of providing (within reasonable limits) personal protective equipment without cost to employees and visitors. Each department is responsible for the funding of its personal protective equipment. Student protective devices may also be funded at the discretion of the department, charged to students individually, purchased directly by students, or provided through special course fees. Employees and departments are responsible for maintaining personal protective equipment in accordance with OSHA, ANSI, and other applicable standards.

In those circumstances where prescription safety glasses are necessary, the employee should take advantage of the university medical insurance program to pay for the cost. If the cost is in excess of the insurance payment, the department will pay for the excess provided the cost does not exceed reasonable and customary charges. EHS/RMS will assist departments with determining the need for prescription safety glasses.

Specialized footwear that would not customarily be worn off-the-job will be provided without cost to employees by their department. Examples of such specialized footwear include slip-on rubbers, and calf-length and knee-length rubber boots.

Employees whose job duties require safety shoes will be required to obtain safety shoes before starting work. The cost of one pair per year (less than $100.00 currently, but subject to market adjustments as determined by administration) will be paid by the university. After receiving permission from their supervisor, employees may purchase the shoes and submit the receipt to their department for reimbursement. Exceptions to the current reimbursement limit will be made on a case-by-case basis to accommodate special needs of individuals (over- or under-sizing, deviations in shape, etc.).
Eye and Face Protection

University policy requires employee protective eye and face equipment where there is a reasonable probability of injury that can be prevented by such equipment. The probability of injury exists where machines or activities present hazards from flying objects, glare, liquids, injurious radiation, or a combination of these hazards. In such cases, departments shall provide protectors suitable for the work performed, make them conveniently available, and require employees to use them. Departments are also responsible for providing eye and face protection for visitors when entering identified hazardous areas. They have the option of providing eye and face protection for students or requiring students to obtain their own protective devices. If students are required to obtain their own eye and face protection, the department is responsible to ensure that the proper type is being used.

Rules for Use

The following rules for use should be observed for employees, students, and visitors:

1. Eye protective devices must be worn in laboratories at all times where an eye hazard has been demonstrated to exist.

2. Goggles, or safety glasses plus face shield, must be worn in all laboratories when working around or near potential splash hazards (when hot liquids, or flammable, corrosive or caustic chemicals are being used).

3. Where there is an explosive (or implosive) hazard, eye and face protective devices must be worn.

4. Eye protective devices must be worn when hazardous activities of operating power tools, pouring molten metal, welding, soldering, hammering, chipping, cutting, etc., are in progress. The wearing of safety glasses in shops at all times is encouraged. Eye protection is also required for other persons exposed within the area of these operations.
Protective Device Selection

All eye and face protective devices, including spectacles, goggles, and face shields, shall comply with American National Standards Institute (ANSI) Z87.1-1989 and later revisions thereof. Only ANSI approved devices will be used by university employees, students, and visitors.

The type of device required will depend on the nature of the hazard and the frequency with which it is encountered. There are three basic types of eye protection which will meet the majority of University maintenance, shop, and laboratory requirements. These are safety spectacles (with or without side shields), dust goggles, and chemical or splash goggles. Each of these meets the basic eye protection standards for frontal exposure to flying particles.

**Safety glasses** with side shields, or goggles, are required if flying particles are likely to enter at an angle, and are usually required where two or more people are working in close proximity. Safety glasses with permanently attached side shields, or dust goggles, will provide this protection. Clip-on side shields do not meet ANSI standards.

**Safety splash goggles** are required to provide protection against corrosive or hot liquids or fine particles capable of penetrating the ventilation holes in dust goggles, (see recommended Laboratory Rules covered in this section for additional information).

**Dust goggles** are the least expensive approved eye protection devices available, fit most head sizes and facial shapes, and may be worn over ordinary glasses. They are recommended for visitors, employees, and student where exposure to hazards is less extensive or prolonged.

Safety glasses are generally more comfortable than goggles and are therefore recommended for employees and students who require eye protection frequently and/or for long durations (more than two hours per
day), however they provide little splash protection. Several years ago the Federal Food and Drug Administration passed regulations requiring impact-resistant lenses for all eye wear. Although these lenses are a marked improvement over the old style lenses that were likely to splinter on impact, they do not meet ANSI standards for industrial quality safety spectacles.

More detailed information on eye protection requirements is available from the EHS/RMS (786-1351 or ayssg@uaa.alaska.edu) for all hazards including those involving welding and brazing, lasers, ultraviolet radiation, and ionizing particulate radiation. In addition, the following charts are provided to assist in eye and face protection equipment.

<table>
<thead>
<tr>
<th>Filter Lenses for Protection Against Radiant Energy</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Operations</strong></td>
</tr>
<tr>
<td>----------------</td>
</tr>
<tr>
<td>Shielded metal arc welding</td>
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<td></td>
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<tr>
<td>Torch brazing</td>
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<tr>
<td>Torch soldering</td>
</tr>
</tbody>
</table>

Note: as a rule of thumb, start with a shade that is too dark to see the weld zone. Then go to a lighter shade which gives sufficient view of the weld zone without going below the minimum. In oxyfuel gas welding or cutting where the torch produces a high yellow light, it is desirable to use a filter lens that absorbs the yellow or sodium line in the visible light of the operation.
Selection chart guidelines for eye and face protection

The following chart provides general guidance for the proper selection of eye and face protection to protect against hazards associated with the listed hazard "source" operations.

<table>
<thead>
<tr>
<th>Source</th>
<th>Hazard</th>
<th>Protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>IMPACT - Chipping, grinding machining, masonry work, woodworking, sawing, drilling, chiseling, powered fastening, riveting, and sanding</td>
<td>Flying fragments, objects, large chips, particles, sand, dirt, etc.</td>
<td>Spectacles with side protection, goggles, face shield For severe exposure, use face shield</td>
</tr>
<tr>
<td>HEAT-Furnace operation and arc welding</td>
<td>Hot sparks</td>
<td>Faceshields, spectacles with side. For severe exposure use faceshield.</td>
</tr>
<tr>
<td>CHEMICALS-Acid and chemical handling, degreasing, plating</td>
<td>Splash</td>
<td>Goggles, eyecup and cover types. For severe exposure, use face shield.</td>
</tr>
<tr>
<td>DUST - Woodworking, buffing, general, buffing, general dusty conditions.</td>
<td>Nuisance dust</td>
<td>Goggles, eye cup and cover type</td>
</tr>
</tbody>
</table>

Photogray lenses are not approved for indoor use because the percentage of light transmitted under normal room lighting conditions is below ANSI standards.
Precautions

The National Society for the Prevention of Blindness strongly advises against the use of contact lenses by industrial employees, except in rare instances. The Society recommends that any exceptions be verified, in writing, by the physician or optometrist who sanctions such use in a specific industrial or laboratory environment. Contact lenses do not protect the portion of the cornea they cover; furthermore, dissolved vapors, liquids, and dust particles tend to creep behind the lens. **Contact lenses will not be worn when working with volatile chemicals or during operations that generate fumes, mists, and aerosols except where acceptable vision correction can only be accomplished by contact lenses.**

Face shields do not meet eye protection standards and are only for face protection. Appropriate eye protection devices must be worn under the face shield.

Safety goggles and shields can be worn over regular prescription glasses. Non-prescription eye protective devices issued to employees, students, and visitors remain the property of the university and are to be returned when the use of the devices is no longer necessary. The disposition of prescription glasses shall be determined by the department.

Replacement

Glasses damaged during normal wear and use may be replaced without charge to the employee or student at the discretion of the department head or designated administrative officer. Replacement of lost or stolen devices will be the responsibility of the employee or student to whom they were issued unless the department assumes the responsibility.

Cleaning

Eye protective devices are personal items and should be issued for the exclusive use of each individual. Exceptions to this rule can be made when approved cleaning, sterilizing, and maintenance procedures are used. Eye protective devices must be thoroughly cleaned and disinfected before being issued to another person. Disinfection information is available from the EHS/RMS office.
Every laboratory or work place using caustic and/or corrosive chemicals shall be equipped with emergency eye wash facilities. The eye washes must be inspected periodically in accordance with manufacturers’ recommendations, or industry best practices. Plumbed eye washes should be purged by allowing the water to run for five to ten minutes at least once a week.

When the eye has received chemical irritation, the preferred first aid is to flood the eye with water immediately for at least 15 minutes and then seek medical treatment as soon as possible. Neutralizers or other medication should be used only on the advice, or under the direction, of a physician.

1. **Description and Use of Eye/Face Protectors**

**Safety Glasses.** Protective eyeglasses are made with safety frames, tempered glass or plastic lenses, temples and side shields which provide eye protection from moderate impact and particles encountered in job tasks such as carpentry, woodworking, grinding, scaling, etc. Safety glasses are also available in prescription form for those persons who need corrective glasses.

**Single Lens Goggles.** Vinyl framed goggles of soft pliable body design provide adequate eye protection from many hazards. These goggles are available with clear or tinted lenses, perforated, port vented, or non-vented frames. Single lens goggles provide similar protection to spectacles and may be worn in combination with spectacles or corrective lenses to insure protection along with proper vision.

**Welders/Chippers Goggles.** These goggles are available in rigid and soft frames to accommodate single or two eyepiece lenses.

1. **Welder’s goggles provide protection from sparking, scaling, or splashing metals and harmful light rays.** Lenses are impact resistant and are available in graduated shades of filtration.
2. Chippers/Grinders goggles provide eye protection from flying particles. The dual protective eye cups house impact resistant clear lenses with individual cover plates.

**Face Shields**. These normally consist of an adjustable headgear and face shield of tinted/transparent acetate or polycarbonate materials, tensile strength, impact/heat resistance and light ray filtering capacity. Face shields will be used in operations when the entire face needs protection and should be worn to protect eyes and face against flying particles, metal sparks, and chemical/biological splash.

**Welding Shields**. These shield assemblies consist of vulcanized fiber or glass fiber body, a ratchet/button type adjustable headgear or cap attachment and a filter and cover plate holder. These shields will be provided to protect workers’ eyes and face from infrared or radiant light burns, flying sparks, metal spatter and slag ships encountered during welding, brazing, soldering, resistance welding, bare or shielded electric arc welding and oxyacetylene welding and cutting operations.

*Guidelines*  
**Selection of hand protection shall be based on an evaluation of the:**

- performance characteristics of the hand protection relative to the task(s) to be performed
- conditions present
- duration of use
- hazards and potential hazards identified

Gloves are often relied upon to prevent cuts, abrasions, burns, and skin contact with chemicals and biologicals that are capable of causing local or systemic effects following dermal exposure. There is no glove that provides protection against all potential hand hazards, and commonly available glove materials provide only limited protection against many
chemicals. Therefore, it is important to select the most appropriate glove for a particular application and to determine how long it can be worn, and whether it can be reused. It is also important to know the performance characteristics of gloves relative to the specific hazard anticipated; e.g., chemical hazards, cut hazards, flame hazards, etc. Before purchasing gloves, request documentation from the manufacturer that the gloves meet the appropriate test standard(s) for the hazard(s) anticipated. Other factors to be considered for glove selection in general include:

- As long as the performance characteristics are acceptable, in certain circumstances, it may be more cost effective to regularly change cheaper gloves than to reuse and maintain more expensive types.
- The work activities of the employee should be studied to determine the degree of dexterity required, the duration, frequency, gripping, and degree of exposure of the hazard, and the physical stresses that will be applied.

**Selection of gloves for protection against chemical hazards:**

(A) The toxic properties of the chemical(s) must be determined; in particular, the ability of the chemical to cause local effects on the skin and/or to pass through the skin and cause systemic effects.

(B) Generally, any "chemical resistant" glove can be used for dry powders;

(C) For mixtures and formulated products (unless specific test data are available), a glove should be selected on the basis of the chemical component with the shortest breakthrough time, since it is possible for solvents to carry active ingredients through polymeric materials.

(D) Employees must be able to remove the gloves in such a manner as to prevent skin contamination. Safe removal of water resistant gloves when contamination is suspected can be facilitated by first washing the gloved hand in soap and running water prior to removing them.
Chemical Resistance Gloves. These gloves may be made of rubber, neoprene, polyvinyl alcohol or vinyl, etc. The gloves protect hands from corrosives, oils, solvents, etc. A chemical compatibility chart should be consulted to select the proper glove for the proper chemical. Reputable chemical resistant glove manufacturers will provide information on what chemicals their gloves are recommended for. Therefore prior to the purchasing of gloves, review the Material Safety Data Sheet (MSDS) or manufacturers recommendations to determine if it specifies what kind of chemical resistance glove is recommended. Because many chemicals are mixtures, gloves tested to be effective against all hazardous chemicals in the mixture should be used and the MSDS may provide this information. Also, if glove type is not specifically provided on the MSDS, call the manufacturer of the chemical (phone number is generally on the MSDS) and ask if they recommend a specific glove.

Selection of gloves for protection against physical hazards:

The following list is only representative of the most common physical hazards. Always follow manufacturer’s advice on glove selection.

(A) Abrasions: heavy leather, cotton or synthetic
(B) Contusions: padding
(C) Punctures and Lacerations: chain mail, Kevlar, or other appropriate synthetics
(D) Electrical: heavy rubber or other appropriate electrical insulating materials
(E) Vibration: any material that dampens vibrations
(F) Heat & Steam: ceramic weaves or other heavy heat insulators
(G) Slipperiness: gripper nubs
(H) Cold: thermal insulating materials
(I) Biologicals: latex
(J) Radiation: lead lined or weaved as appropriate
1. **Disposable Gloves.** Disposable gloves, usually made of light-weight plastic, can help guard against mild irritants. Employees should advise supervisors of latex sensitivities or allergies so that an appropriate alternative can be selected.

2. **Fabric Gloves.** Made of cotton or fabric blends are generally used to improve grip when handling slippery objects. They also help insulate hands from mild heat or cold. Cryogenic gloves are a special form of fabric glove that is specifically selected for protection when working with cryogenic materials.

3. **Leather Gloves.** These gloves are used to guard against injuries from sparks or scraping against rough surfaces. They are also used in combination with an insulated liner when working with electricity.

4. **Metal Mesh Gloves.** These gloves are used to protect hands from accidental cuts and scratches. They are used most commonly by persons working with cutting tools or other sharp instruments.

5. **Aluminized Gloves.** Gloves made of aluminized fabric are designed to insulate hands from intense heat. Persons working with molten materials may wear these gloves.

**Work Practice Guidelines**

The following list contains some general guidelines to protect hands and fingers:

- Never put your hands or fingers on loads being moved mechanically without watching for pinch points and other potential hazards.

- Gloves can be caught in moving parts making it impossible for fingers and hands to be pulled into machinery. Wear them only when there is exposure to hazards that could cause cuts or scrapes or chemical/biological/radiation that could produce injuries or skin diseases. Do not wear gloves around reciprocating or rotating machine parts.

- Never use hands to stop rotating parts.
• Never use fingers to align holes in parts like castings.

• Don’t wear rings when performing hazardous jobs with your hands.

• Use fuse removers to pull fuses. Don’t use your fingers.

• When lifting, check objects for protrusions, nails, splinters or other sharp or pointed objects.

• Adjust grinder tool rests no further that 1/8 inch away from the wheel to avoid getting a finger into the gap or having a work piece hurled at you or your co-workers.

• Never use your fingers to test the temperature of gases, liquids, or solids. Damage can happen before your reflexes can pull your hand away.

• When handling large metal drums, watch out for pinch points and sharp edges; one drum can roll against another, catching your fingers between them.

• Handle very sharp or pointed tools, like hatches, chisels, punches, awls, knives, and machine blades with extreme care.

• Avoid using your fingers to fish out things lying near saw blades, knife blades or parts moving together, such as awls, punch presses, rotating parts of drill bits and reciprocating parts of in-running rolls. Use proper lock-out-tag-out procedures before servicing equipment that can become accidentally energized.

*Head Protection*

All head protection is designed to provide protection from impact and penetration hazards caused by falling objects or other overhead hazards. Head protection is also available which provides protection from electric
shock and burn. When selecting head protection, knowledge of potential electrical hazards is important.

- Class A helmets, in addition to impact and penetration resistance, provide electrical protection from low-voltage conductors (they are proof tested to 2,200 volts).

- Class B helmets, in addition to impact and penetration resistance, provide electrical protection from high-voltage conductors (they are proof tested to 20,000 volts).

- Class C helmets provide impact and penetration resistance (they are usually made of aluminum which conducts electricity), and should not be used around electrical hazards.

Hard hats shall be worn by all personnel engaging in activities that have associated overhead hazards or when they are in the proximity of activities that have associated overhead or electrical shock hazards. In general, an overhead hazard can be described as a reasonable potential for someone to bump their head against an obstruction, the potential for something to fall on someone’s head, or the potential for a head to come into contact or close proximity to an exposed electrical conductor.

While it is difficult to provide an all-inclusive list of hardhat required areas, some examples of overhead hazard operations at UAA are:

- warehousing especially when forklifts and ladders are being used
- using or working around heavy equipment and forklifts
- working in crawl, interstitial, and above suspending ceiling spaces
- working in mechanical or utility rooms
- working on or around scaffolding or ladders equipped to hold materials and equipment
- working above face level with tools or other heavy items or debris that can accidentally be dropped
- working in tight areas where sudden movements could lead to someone bumping their head into an obstruction
- working in or around excavations
- working in any category of confined space
- working in areas where a hardhat could provide good protection from flying or projectile debris and objects
- working in areas that are otherwise designated as hardhat required areas by supervisory or safety personnel or contractors
- working in areas where electrical conductors are exposed

**Warnings**

When hardhat required work is performed, especially in areas easily accessible by the general public, measures will be taken to provide notice and security of the hazardous work area such as signage, barricades, ropes, caution tape, spotters or monitors, etc.

**Foot Protection**

There are many types and styles of protective footwear and it is important to realize that a particular job may require additional protection other than listed here. Footwear that meets established safety standards will have an ANSI label inside each shoe.

**Safety Shoes**

Safety shoes are used to protect the feet against injuries from heavy falling objects, against crushing by rolling objects, or against lacerations from sharp edges. Safety shoes are required for employees whose routine job duties require the lifting, carrying, or moving, etc., of objects weighing more than fifteen pounds, which, if dropped, would likely result in foot or toe injury. Once safety shoes have been required for a job, employees will not be allowed to work without foot protection.

Six or eight-inch safety shoes are recommended for employees involved in activities where ankle abrasions are likely. Flexible steel midsoles are required for employees who are likely to step on sharp objects that could penetrate normal soles.
EHS maintains a limited supply of slip-over safety-toed units that are available as loaners upon request to meet employees’ occasional needs. These are especially useful when office workers and others are assisting with moving furniture and boxes during department relocations or remodeling activities.

Over-the-shoe rubber footwear, worn over standard (or safety) footwear or boots, is required in wet or icy locations. Rubber boots with toe and metatarsal protection are recommended for employees working in flooded trenches or other locations where ordinary over-the-shoe protection would be inadequate to insure that the employee's shoes would remain dry.

**Spikies**

Foot traction devices or suitable anti-slip soles must be worn by employees working in icy environments. Employees who routinely work in icy conditions outdoors or in ice rinks must wear traction devices. UAA provides these traction devices at no charge to all employees. Employee categories eligible to receive these devices at no cost to include: regular full time, temporary, student workers, teaching assistants, resident advisors, adjunct faculty, full time faculty, and other UA, UAF, UAS employees stationed in UAA administrative areas. Annual and other periodic announcements will be provided to inform employees of distribution centers and special instructions for community campus distributions.

**Laboratory Footwear**

Employees or students are expected to wear footwear appropriate for the laboratory environment. Sandals or other open toe style shoes are not permitted in laboratories, shops, or other job locations where glass, caustic or corrosive chemicals, or hot materials are used or handled. In addition, excessively high heels are considered unsafe in most industrial and laboratory settings. Safety footwear shall conform to ANSI Z41.1-1967 Class 75 standards, and subsequent revisions.