

# JOB HAZARD ANALYSIS

WELDER		SAFE OPERATING GUIDELINES												2017		
	HAZARD POTENTIAL EVALUATION						ERGONOMICS ASSESSMENT									
	<input checked="" type="checkbox"/> Struck By	<input type="checkbox"/> Weather Conditions	<input checked="" type="checkbox"/> Lifting	L	M	F	<input checked="" type="checkbox"/> Walking	L	M	F	<input checked="" type="checkbox"/> Kneeling	L	M	F		
	<input checked="" type="checkbox"/> Struck Against	<input checked="" type="checkbox"/> Hazardous Substance	<input checked="" type="checkbox"/> Carrying	L	M	F	<input checked="" type="checkbox"/> Standing	L	M	F	<input checked="" type="checkbox"/> Hearing/Noise	L	M	F		
	<input checked="" type="checkbox"/> Slip/Trip/Fall	<input checked="" type="checkbox"/> Electrical Hazards	<input type="checkbox"/> Reaching Above Shoulder	L	M	F	<input type="checkbox"/> Sitting	L	M	F	<input type="checkbox"/> Climbing Stairs	L	M	F		
	<input checked="" type="checkbox"/> Caught In/Between	<input type="checkbox"/> Obstruction/Confined	<input checked="" type="checkbox"/> Straight Pulling	L	M	F	<input type="checkbox"/> Crawling	L	M	F	<input type="checkbox"/> Climbing Ladders	L	M	F		
	<input checked="" type="checkbox"/> Material Handling	<input checked="" type="checkbox"/> Equipment Operating	<input checked="" type="checkbox"/> Pulling hand over hand	L	M	F	<input checked="" type="checkbox"/> Twisting	L	M	F	<input type="checkbox"/> Simple Grasp	L	M	F		
HIRAC	1	2	3	4	<input checked="" type="checkbox"/> Dual Grasp	L	M	F	<input checked="" type="checkbox"/> Pushing	L	M	F	<input type="checkbox"/> Repeated Motion	L	M	F

## TRAINING REQUIREMENTS

GENERAL CAMPUS			DEPARTMENT SPECIFIC			SPECIALTY																	
Cal Maritime	EHS Pocket Guide	Emergency Response Guide	Department	Authorized Driver	Ergonomics RMI Prevention	Basic First Aid/CPR/AED	Marine Programs	T.S. Golden Bear	As Identified/Determined														
I	A	O	H	I	A	O	H	I	A	O	H	I	A	O	H	I	A	O	H	I	A	O	H

**DO NOT USE ANY EQUIPMENT OR MACHINE UNLESS YOU HAVE RECEIVED INSTRUCTION IN THE SAFE USE AND OPERATION AND HAVE AUTHORIZATION TO USE.**

## PERSONAL PROTECTIVE EQUIPMENT

Eye Protection	Foot Protection	Hand Protection	Hearing Protection	Body Protection	Head Protection	Respiratory Protection	Fall Protection	Face Shield	OTHER
When exposed to eye or face hazards from flying particles, molten metal, liquid chemicals, acids or caustic liquids, chemical gases or vapors, or potentially injurious light radiation...	When working in areas where there is a danger of foot injuries due to falling or rolling objects, or objects piercing the sole, or will protect the affected	When hands are exposed to hazards such as those from skin absorption of harmful substances; severe cuts or lacerations; severe abrasions; punctures; chemical burns	When exposed to a time weighted average noise level of 85 dBA or higher over an 8 hour work shift.	When exposure to: Intense heat, hot metals, other hot liquids Impacts from materials that can cut, burn Hazardous chemicals Or potentially infectious materials	Where there is a potential for injury to the head from falling objects and/or when there is a risk of impact to head	May be required if removal of contaminants from the air does not fall below permissible exposure level.	When there is a risk of falling from a height greater than 4ft GSO 6ft CSO 6ft MSO When working in confined space	Face shield can be used over the glasses if there is a presence of a lot of flying debris.	

**IF CONDITIONS CHANGE: STOP WORK IMMEDIATELY-REVIEW WITH SUPERVISOR-DOCUMENT HAZARD-REVIEW WITH SRM**











Ergonomic

(L) Low <2hrs (M) Moderate 2-5hrs (F) Frequent >5hrs per 8-hours










Training

(I) Initial (A) Annual Refresher (O) Occasion/Post Incident (H) Hazard



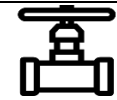



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GENERAL CAMPUS SAFE OPERATING PROCEDURES			
WORK DUTIES		HAZARD POTENTIAL	HAZARD CONTROLS & PROTECTION MEASURES
1	Use of office equipment 	Electrocution, electrical shock, bruising and miscellaneous injuries	<ul style="list-style-type: none"> <li>⚓ Ensure all electrical equipment is properly grounded. (i.e. three prong electrical plugs) and in proper working order before using. Strictly follow all manufactures precautions and recommendations.</li> <li>⚓ <b>DO NOT</b> overload circuits by stringing multiple power strips (also known as daisy chaining)</li> </ul>
2	Using ladders or step-ladders 	Ladder collapsing; Slipping and falling from ladder	<ul style="list-style-type: none"> <li>⚓ Inspect ladder before use. Use ladder at proper height.</li> <li>⚓ Make sure the ladder is assembled, locked and on level ground.</li> <li>⚓ <b>DO NOT</b> exceed weight limit for ladder.</li> <li>⚓ <b>DO NOT</b> stand on the top or top rung of ladder and make sure a co-worker is holding ladder if any higher than a step-ladder.</li> </ul>
3	Work Station 	Muscle-skeletal disorders, eye/body strain and fatigue	<ul style="list-style-type: none"> <li>⚓ Ensure workstation is ergonomically correct for the person using the workstation.</li> <li>⚓ Ensure proper lighting so that there isn't a glare in order to prevent eye strain.</li> <li>⚓ Review phone placement and accessories so that operator is sitting square and limiting excessive head/neck tilt in order to prevent neck strain</li> </ul>
4	Office Furniture 	Falling objects	<ul style="list-style-type: none"> <li>⚓ Ensure all doors and drawers are fully secured. Do not overload shelves.</li> <li>⚓ Ensure bookcases are seismically strapped/secure to wall to prevent tipping over.</li> </ul>
5	Walking in offices, buildings hallways and stairs 	Slips, trips and falls	<ul style="list-style-type: none"> <li>⚓ Ensure all walking and working surfaces have been properly maintained, properly lit, are free of debris and remove potential tripping hazards.</li> <li>⚓ Use handrails when using stairs.</li> <li>⚠ Note: No opened toed footwear is allowed in food operations</li> <li>⚠ Note: No opened toed footwear is allowed on T.S. Golden Bear</li> </ul>
6	Campus Construction Activities 	Pedestrians knocking over ladders or lights or bumping into worker; pedestrians getting hit with equipment or falling tools, etc.	<ul style="list-style-type: none"> <li>⚓ Always be aware of surroundings.</li> <li>⚓ Stay away from construction zones.</li> </ul>
7	Working outside in Weather 	Heat stroke, heat exhaustion, frostbite	<ul style="list-style-type: none"> <li>⚓ Dress appropriately for the weather, keep hydrated, and take necessary breaks when needed</li> </ul>
8	Heaving lifting and reaching 	Overexertion, strains and sprains	<ul style="list-style-type: none"> <li>⚓ Use proper lifting techniques, limit duration of repetitive motion.</li> <li>⚓ Always know your weight limit, lift with your legs, get help if needed.</li> <li>⚓ Use step ladders when lifting objects above shoulder height.</li> </ul>
9	Campus 	Personal safety and security	<ul style="list-style-type: none"> <li>⚓ Always be aware of your surroundings.</li> <li>⚓ Changing weather conditions can increase slip hazards throughout the campus</li> </ul>
10	Operating university vehicles 	Motor vehicle accident, striking a pedestrian or bicyclist	<ul style="list-style-type: none"> <li>⚓ Inspect vehicles before use.</li> <li>⚓ Use seat belts. Travel at safe speed for conditions.</li> <li>⚓ Stay alert for pedestrians, other vehicles, and objects in travel path.</li> </ul>


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POSITION SPECIFIC SAFE OPERATING PROCEDURES				
WORK DUTIES		HAZARD POTENTIAL		HAZARD CONTROLS & PROTECTION MEASURES
1	Arc, TIG and MIG welding		Burns, eye injuries, electric shock, inhalation of fumes, loud noise (pulses) fatigue, sparks, hot metal fragments, flying debris	<ul style="list-style-type: none"> <li>Wear proper PPE gloves, apron, leather shoes and eye protection. Work in well-ventilated area. Make sure all electrical connections are properly grounded and dry. Wear hearing protection. Erect protection barrier. Have a fire watch</li> </ul>
2	Equipment Maintenance		Electric shock, parts shooting and striking working, getting caught in equipment, cuts from sharps edges.	<ul style="list-style-type: none"> <li>Shut off any power source before working.</li> <li>Insulated tools are required when working on electrical system or equipment</li> <li>Wear appropriate PPE.</li> </ul>
3	Working with Power Tools		Cuts, abrasive, electric shock, injury from flying debris, tripping over power cords, electrocution	<ul style="list-style-type: none"> <li>Wear goggles and dust mask if applicable. Keep cords away from work area. Keep tools in good condition.</li> <li>Inspect tools before use. Verify that guards are working properly. <b>DO NOT</b> put hand near blades. Make sure you have a good center of gravity and maintain control at all times</li> </ul>
4	Using hand tools		Cuts, pinches, smashes, punctures, severing fingers	<ul style="list-style-type: none"> <li>Keeps tools in good conditions. Inspect before use.</li> <li>Wear safety glasses.</li> <li>Work away from yourself. Use normal caution required for all hand tools.</li> </ul>
5	Working on roofs		Slipping and falling, high winds, getting stranded on roof if working alone	<ul style="list-style-type: none"> <li>Review fall protection requirements.</li> <li>Walk carefully not too close to the edge. If possible avoid working on really windy or wet/icy days. Keep doors propped open with a 2-way radio.</li> </ul>
6	Working around electricity		Electric shock; electrocution	<ul style="list-style-type: none"> <li>Shut off power to work area. Use lock-out device to ensure power is not inadvertently switched on. Always test before beginning work to verify that power is off. Remove tools and other metals from body. If you must work with electricity on, wear safety glasses and leather gloves. Have coworker with you in case there is a problem. If work area is wet, clean up standing water before working with electricity; wear rubber boots and gloves.</li> </ul>
7	Using scaffolding		Scaffold collapsing, slipping/tripping falling from scaffold	<ul style="list-style-type: none"> <li>Inspect before use. Ensure unit is assembled correctly. Ensure wheels, if applicable, are locked. Ensure footing are secured. Ensure planks are secured and pulled up or missing.</li> </ul>
8	Using ladders or step-ladders		Ladder collapsing; Slipping and falling from ladder	<ul style="list-style-type: none"> <li>Inspect ladder before use. Use ladder at proper height. Make sure the ladder is assembled, locked and on level ground. <b>DO NOT</b> exceed weight limit for ladder. <b>DO NOT</b> stand on the top or top rung of ladder and make sure a co-worker is holding ladder if any higher than a step-ladder.</li> </ul>
9	Working in mechanical rooms		Explosions from gas lines, burns from steam, hot water lines, slipping on water oil, tripping over materials being stored and loud noises	<ul style="list-style-type: none"> <li>Be aware of odors and evacuate if you smell gas. Be aware of your surroundings. Clean up and standing liquid on floor, walk carefully, wear earplugs as needed or required when noise exceeds PEL 85dBA/8hr.</li> </ul>

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10	Working in confined spaces		Lack of oxygen or exposure to toxic or flammable gases	<ul style="list-style-type: none"> <li>Before working in confined area, verify that is safe to enter by performing air monitoring. Obtain confined space permit as required. While working always ventilate area using fan and continue to monitor air. Have at least one person outside confined space to monitor safety as outlined in permit required work.</li> </ul>
11	Working with steam heat, hot water pipes		Severe burns, inhalation of steam	<ul style="list-style-type: none"> <li>Whenever possible, shut off steam in work area several hours before beginning job. Look at gauges before beginning work to verify that they are working properly</li> <li>Be aware of steam leaks. Drain systems and/or pump before working on them. Release pressure slowly by nicking pipe. Pull out pump slowly and put a barrier between you and the pump to protect against steam and hot water.</li> </ul>
12	Working with pneumatic parts		Getting sprayed with hot or cold water, steam, refrigerates. Injuries from shooting parts	<ul style="list-style-type: none"> <li>Slowly open valves to release pressure and wear safety glasses</li> </ul>
13	Storing or transporting compressed gas cylinders		Explosion of compressed gas, rupture of valve	<ul style="list-style-type: none"> <li>Do not allow cylinder valve or the regulators to come in contact with grease, oil or other lubricants. Always install a protective valve cover and secure cylinders to a stand or wall. Wear proper PPE</li> </ul>
14	Soldering and brazing using oxygen/acetylene		Explosion, burns, inhalation of fumes	<ul style="list-style-type: none"> <li>Check hose connections for leaks prior to using, work in well ventilated areas.</li> <li><b>DO NOT</b> solder around flammable materials. Wear proper PPE and burn away from yourself.</li> <li>Use correct solder for the job. Complete hot work permit and have a person standing by for fire watch</li> </ul>
15	May work with materials containing asbestos		Could cause possible health issues if inhaled or ingested	<ul style="list-style-type: none"> <li>Never disturb materials containing asbestos unless properly trained.</li> <li>Always use appropriate exposure control methods and wear designated PPE</li> </ul>
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CORE EHS TRAINING REQUIREMENTS					ADDITIONAL NOTES	
		I	A	O	H	As a general rule, <b>there is Specific PPE</b> is required for welding personnel and those entering the welding shop. In the event conditions require PPE, personnel will be relocated to designated safe zones. Personnel assigned to the T.S. Golden Bear will be required to wear sturdy, closed toed shoes.
		I	A	O	H	
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		I	A	O	H	
	Basic First Aid /CPR/AED	Recommended				
<b>IF CONDITIONS CHANGE: STOP WORK IMMEDIATELY-REVIEW WITH SUPERVISOR-DOCUMENT HAZARD-REVIEW WITH SRM</b>						
EMERGENCY RESPONSE				HOUSEKEEPING & SECURITY		
1	First Aid Kit	Located in buildings	1	Is the work area/site Clean?	Ensure work area is clean daily and that any hazardous materials are properly disposed of daily	
2	AED	Located in all main buildings	2	Is the work area/site Secure?	Ensure lights are turned off and building is locked upon exiting work for the day.	
3	Emergency phone	Campus Police- 707-654-1111 or 911	3			
4	Evacuation	TBD based on Facility & Emergency				
<b>REMINDER: IMMEDIATELY REPORT ALL INCIDENTS, REGARDLESS OF SEVERITY, TO YOUR SUPERVISOR AND THE DEPARTMENT OF SAFETY &amp; RISK MANAGEMENT.</b>						