UCCS TASK SPECIFIC PPE REQUIREMENTS

CHEMICAL USE HAZARDS

Note that engineering controls such as chemical fume hoods should be used where possible to minimize chemical exposure.

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [5]	Foot	Hair	Hearing	Respiratory	Special Notes
1.	Working with small volumes of hazardous liquids (corrosive, organic solvents, toxics, etc.) in essentially closed systems (i.e. autopipettors, squirt bottles) (100 ml to 500 ml).	Eye or skin damage	Safety glasses or goggles.	Light chemical-resistant gloves.	Lab coat - leg coverings.	Closed Toe/Heel – low heel height	Confined			
2.	Working with small volumes of low concentration corrosive liquids (500 ml to 2 liters).	Eye or skin damage	Safety glasses or goggles.	Light chemical-resistant gloves.	Lab coat - leg coverings.	Closed Toe/Heel – low heel height	Confined			
3.	Working with small volumes of corrosive liquids (>2 liters).	Eye or skin damage	Safety goggles.	Light chemical-resistant gloves.	Lab coat - leg coverings.	Closed Toe/Heel – low heel height	Confined			
4.	Working with corrosive liquid in a manner that creates a splash hazard [1]	Significant eye and skin damage, poisoning	Safety goggles and face shield	Chemical-resistant gloves	Lab coat - leg coverings – Add a chemical-resistant apron if a greater potential for splashing exists	Closed Toe/Heel – low heel height	Confined			
5.	Working with acutely toxic liquids or work with these liquids that creates a splash hazard [1]	Significant eye and skin damage, poisoning	Safety goggles and face shield	Chemical-resistant gloves	Lab coat - leg coverings – Add a chemical-resistant apron if a greater potential for splashing exists	Closed Toe/Heel – low heel height	Confined			
6.	Working with large volumes of corrosive liquids (> 4 liters), small to large volumes of toxic corrosives, or work with these liquids that creates a splash hazard [1]	Significant eye and skin damage, poisoning	Safety goggles and face shield	Heavy chemical-resistant gloves	Lab coat - leg coverings – Add a chemical-resistant apron if a greater potential for splashing exists	Closed Toe/Heel – low heel height	Confined			
7.	Working with small volumes of organic solvents (< 2 liters) in open systems.	Skin or eye damage, poisoning potential through skin contact	Safety goggles	Chemical-resistant gloves	Lab coat - leg coverings	Closed Toe/Heel – low heel height	Confined			
8.	Working with large volumes of organic solvents (> 4 liters), small to large volumes of very dangerous solvents, or work with these liquids that creates a splash hazard [1]	Significant skin or eye damage; potential poisoning through skin contact; Fire	Safety goggles and face shield	Heavy chemical-resistant gloves	Lab coat - leg coverings. Add a chemical-resistant apron if a greater potential for splashing exists; Wear cotton or	Closed Toe/Heel – low heel height	Confined			

UCCS TASK SPECIFIC PPE REQUIREMENTS

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [5]	Foot	Hair	Hearing	Respiratory	Special Notes
					flame- retardant fabric lab coat (not synthetic) when there is potential for fire; if there is a significant fire potential, use flame-resistant coat such as Nomex.					
9.	Working with toxic or hazardous chemicals (solid, liquid, gas) in open systems [1, 2]	Eye or skin damage; potential poisoning through skin contact.	Safety goggles	Chemical-resistant gloves	Lab coat - leg coverings	Closed Toe/Heel – low heel height	Confined			
10.	Working with acutely/highly toxic chemicals (solid, liquid, gas). [1, 2]	Potential immediate and/or severe eye or skin damage or poisoning through skin contact.	Safety goggles	chemical-resistant gloves (upon review, double light nitrile may be determined appropriate for small quantities), chemical-resistant gloves for solids	lab coat – leg coverings, evaluate need for gown and shoe covers	Closed Toe/Heel – low heel height	Confined			
11.	Working with an apparatus with contents under pressure or vacuum [1]	Eye or skin damage	Safety glasses or goggles (add face shield for higher risk task)	chemical-resistant gloves	lab coat - leg coverings Add chemical- resistant apron for higher risk task	Closed Toe/Heel – low heel height	Confined			
12.	Working with air or water reactive chemicals or other reactive chemicals	Severe skin and eye damage; Fire	Safety goggles	Chemical-resistant gloves	Lab coat - leg coverings; if there is a significant fire potential, use flame-resistant coat such as Nomex; Chemical resistant apron for higher risk tasks.	Closed Toe/Heel – low heel height	Confined			Work in inert atmosphere
13.	Working with potentially explosive compounds (PECs)	Skin and eye damage due to splash or flying debris	Safety goggles with face shield	; Chemical-resistant gloves	Lab coat - leg coverings; if there is a significant fire	Closed Toe/Heel – low heel height	Confined			Use a safety/blast shield

UCCS TASK SPECIFIC PPE REQUIREMENTS

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [5]	Foot	Hair	Hearing	Respiratory	Special Notes
		caused by detonation; Fire			potential, use flame-resistant coat such as Nomex; Chemical-resistant apron for higher risk tasks					
14.	Working with engineered nanomaterials inside a fume hood 3	Dermal exposure	Safety Goggles	gloves	lab coat - leg coverings	Closed Toe/Heel – low heel height	Confined			
15.	Working with dry engineered nanomaterials outside of the fume hood 4	Inhalation exposure, dermal exposure	Safety goggles	gloves	lab coat - leg coverings, evaluate for disposable clothing	Closed Toe/Heel – low heel height	Confined		N95 or better respirator	
16.	Minor chemical spill cleanup.	Skin or eye damage, respiratory damage.	Safety glasses or goggles	appropriate chemical-resistant gloves	lab coat - leg coverings (consider chemical-resistant apron and boots or shoe covers).	Closed Toe/Heel – low heel height	Confined		Seek assistance if a respiratory hazard exists.	

[1] Use a chemical fume hood or other engineering control whenever possible. *Activities not conducted inside a chemical fume hood or with another engineering control (such as a local exhaust at the workbench) should be evaluated to determine if the activity presents a respiratory hazard. In this case a respirator may be required and a respiratory protection program must be in place per the EHS guidance found at* https://www.uccs.edu/pusafety/environmental In addition to engineering controls and PPE, consider personal clothing that provides adequate skin coverage.

[2] Extremely dusty solids should be separately evaluated for the need to use respiratory protection.

[3] Use a fume hood or other enclosure hood when conducting nanomaterial work activities including synthesizing, weighing, aerosol generation, wet chemistry, or handling nanomaterials in liquids or gel formulations, etc.

[4] Use of elastomeric/rubber masks or dust masks to protect against exposure to nanomaterials should be evaluated and approved before using any nanomaterial outside of a fume hood or other control. The respirator evaluation request form is available on the EHS web site.

[5] Use coats must be fully buttoned and extend to at least the knees. Skin must be covered upto the neckline with either a shirt or a lab coat buttoned to the neck. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting.

BIOLOGICAL HAZARDS

This is applicable to both research facilities and Patient Care Environments

Patient Care Environments include but are not limited to: nursing clinicals, health sciences, athletic training, wellness center and primary care clinics

Note: for patients with specific conditions, we will follow the CDC guidelines: Guideline for Isolation Precautions: Preventing Transmission of Infectious Agents in Healthcare Settings (https://www.cdc.gov/infectioncontrol/guidelines/isolation/index.html)

Note that engineering controls such as biosafety cabinets and other barrier methods should be used where possible to minimize personal exposure.

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [2]	Foot	Hair	Hearing	Respiratory	Special Notes
17.	Working with human blood, body fluids, tissues, secretions, excretions, or contaminated items when contact with clothing or exposed skin is likely	Exposure to infectious material	Safety glasses or goggles	latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined		Optional face shield or Mask	
18.	During procedures and patient-care activities likely to generate splashes of sprays of blood, body fluids, secretions, especially suctioning, endotracheal intubation.	Exposure to infectious material	Safety glasses or goggles	latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined		Mask	
19.	During aerosol-generating procedures on patients with suspect or proven infections transmitted by respiratory aerosols	Exposure to infectious material	Safety glasses or goggles	latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined		Fit-tested N95 or higher respirator	
20.	Working with animal specimens (preserved and unpreserved).	Exposure to infectious material or preservatives.	Safety glasses or goggles	protective gloves such as light latex or nitrile for unpreserved specimens (select protective glove for preserved specimens according to preservative used)	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			
21.	Working with agents or recombinant DNA classified as	Eye or skin irritation.	Safety glasses or goggles	light latex or nitrile gloves	leg coverings (lab coats NOT required)	Closed Toe/Heel – low heel height	Confined			

UCCS TASK SPECIFIC PPE REQUIREMENTS

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [2]	Foot	Hair	Hearing	Respiratory	Special Notes
	Biosafety Level 1, (BSL-1). In quantities <100 ml									
22.	Working with agents or recombinant DNA classified as Biosafety Level 1, (BSL-1). In quantities >100 ml	Eye or skin irritation.	Safety glasses or goggles	light latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			
23.	Manipulation of cell lines, viruses, bacteria, or other organisms classified as Biosafety Level 2, (BSL-2). [1] Classified as non-pathogenic, in quantities <100 ml	Exposure to infectious material, particularly through broken skin or mucous membranes	Safety glasses or goggles	light latex or nitrile gloves	leg coverings (lab coats NOT required)	Closed Toe/Heel – low heel height	Confined			
24.	Manipulation of cell lines, viruses, bacteria, or other organisms classified as Biosafety Level 2, (BSL-2). [1] Non-pathogenic in quantities >100ml Pathogenic in any quantity	Exposure to infectious material, particularly through broken skin or mucous membranes	Safety glasses or goggles	light latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			
25.	Working with live animals (Animal Biosafety Level 1, ABL-1).	Animal bites, allergies	Safety glasses or goggles	light latex, nitrile or vinyl gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			Consider need for wire mesh glove
26.	Working with live animals (Animal Biosafety Level 2, ABL-2) [1]	Animal bites, exposure to infectious material, allergies	Safety glasses or goggles	light latex, nitrile or vinyl gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			Consider need for wire mesh glove.
27.	Working with radioactive human blood, body fluids, or blood borne pathogens (BBP).	Cell damage, potential spread of radioactive contaminants, or potential BBP exposure	Safety glasses (goggles for splash hazard)	light latex or nitrile gloves	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined			
28.	Human cadaver dissection - tissue	Exposure to infectious material or preservatives	Safety glasses or goggles	protective gloves such as nitrile (select protective glove for preserved specimens according to preservative	lab coat -leg coverings or gown	Closed Toe/Heel – low heel height	Confined			

UCCS TASK SPECIFIC PPE REQUIREMENTS

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [2]	Foot	Hair	Hearing	Respiratory	Special Notes
				used may require double gloving depending upon the amount of time in contact with the preservatives)						
29.	Human cadaver dissection - bone	Exposure to infectious material or preservatives	Safety glasses or goggles, face shield	protective gloves such as nitrile (select protective glove for preserved specimens according to preservative used – may require double gloving depending upon the amount of time in contact with the preservatives)	lab coat - leg coverings or gown	Closed Toe/Heel – low heel height	Confined	Hearing protection recommended	Dust mask recommended	

[1] Use a biosafety cabinet to minimize exposure. Activities that cannot be conducted inside the biosafety cabinet should be separately evaluated.

[2] Lab coats must be fully buttoned and extend to at least the knees. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting.

UCCS TASK SPECIFIC PPE REQUIREMENTS

RADIOLOGICAL HAZARDS

Note that engineering controls such as appropriate shielding should be used where needed to minimize exposure to radiological hazards

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [1]	Foot	Hair	Special Notes
30.	Working with solid radioactive materials or waste	Cell damage, potential spread of radioactive materials	Safety glasses	impermeable gloves	lab coat – leg coverings	Closed Toe/Heel – low heel height	Confined	
31.	Working with radioactive chemicals (corrosives, flammables, liquids, powders, etc.	Cell damage or spread of contamination plus hazards for the specific chemical	Safety glasses (or goggles for splash hazard)	light chemical-resistant gloves	lab coat – leg coverings	Closed Toe/Heel – low heel height	Confined	
32.	Working with radiation producing equipment	Cell damage	Safety glasses		Protective lead aprons	Closed Toe/Heel – low heel height	Confined	
33.	Working with ultraviolet radiation	Skin cancer, conjunctivitis, corneal damage, skin redness	UV face shield and goggles		lab coat	Closed Toe/Heel – low heel height	Confined	
34.	Working with infrared emitting equipment (i.e. glass blowing)	Cataracts, burns to cornea	Safety glasses specific for IR		lab coat	Closed Toe/Heel – low heel height	Confined	

[1] Lab coats must be fully buttoned and extend to at least the knees. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting.

UCCS TASK SPECIFIC PPE REQUIREMENTS

LASER HAZARDS

Note that engineering controls such as appropriate shielding should be used where needed to minimize exposure to radiological hazards

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [1]	Foot	Hair	Special Notes
	Open Beam Hazards							
35.	Performing alignment, trouble-shooting or maintenance that requires working with an open beam and/or defeating the interlock(s) on any Class 3 or Class 4 laser system.	Eye damage	Laser safety glasses/goggles that provide sufficient protection specific to the laser wavelength(s), intensity and other use parameters used.					
36.	Viewing a Class 3R laser beam with magnifying optics (including eyeglasses).	Eye damage	Laser safety glasses/goggles that provide sufficient protection specific to the laser wavelength(s), intensity and other use parameters used.					
37.	Working with a Class 3B laser open beam system with the potential for producing direct or specular reflections.	Eye damage, skin damage	Laser safety glasses/goggles that provide sufficient protection specific to the laser wavelength(s), intensity and other use parameters used		Appropriate skin protection.			
38.	Working with a Class 4 laser open beam system with the potential for producing direct, specular, or diffuse reflections.	Eye damage, skin damage	Laser safety glasses/goggles that provide sufficient protection specific to the laser wavelength(s), intensity and other use parameters used.		Appropriate skin protection.			
	Non-Beam Hazards							
39.	Handling dye and other laser-related materials such as chemicals and solvents	Adverse health effects due to toxicity from inhalation or skin absorption, explosion, fire	Safety glasses or goggles	heavy chemical-resistant gloves or double light nitrile glove	lab coat - leg coverings (flame-resistant lab coat or coveralls for increased fire risk).	Closed Toe/Heel – low heel height	Confined	
40.	Laser high voltage supplies	Electrocution						Use properly grounded equipment and tools.

UCCS TASK SPECIFIC PPE REQUIREMENTS

[1] Lab coats must be fully buttoned and extend to at least the knees. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting

PHYSICAL HAZARDS

Note that engineering controls such as machine guards and shields should be used where possible to minimize personal exposure.

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [1]	Foot	Hair	Hearing	Respiratory	Special Notes
41.	Soldering, splatter of flux or hot metal	Eye damage, skin damage	Safety glasses or chemical splash goggles							
42.	Furnaces, molten metal or glass, heat, sparks, glare	Eye damage, skin damage	Dust goggles, reflective face shield	may need heat resistant gloves depending upon potential for hot objects	Arm protection in the form of long sleeves or lab coat - leg coverings	Closed Toe/Heel – low heel height				
43.	Chips, particles, dust, glass shards	Eye damage, respiratory damage	Safety glasses						Dust mask recommended	
44.	Glassware under pressure	Eye damage	Safety glasses or goggles							
45.	Cutting/connecting glass tubing	Eye damage	Safety glasses							
46.	Welding and brazing operations	Eye damage, skin damage	safety glasses, goggles, welding helmets, or welding face shields. This equipment must have filter lenses with a shade number that provides the appropriate level of protection	may need heat resistant gloves depending upon potential for hot objects	Welding jacket – fully buttoned; long pants (natural fibers only)	Closed Toe/Heel – low heel height	Confined			
47.	Drill presses, etc.	Eye damage, skin damage	Safety glasses or goggles	Sleeves rolled up; no loose jewelry – no gloves	No dangling or loose items (no overly loose clothing, necklaces, headphone cables, lanyards, ties, etc.)	Closed Toe/Heel – low heel height	Confined	Hearing protection recommended; no headphones		
48.	Saws, etc.	Eye damage Hearing, respiratory	Safety glasses or goggles		No dangling or loose items (no overly loose	Closed Toe/Heel – low heel height	Confined	Hearing protection recommended;	Dust mask recommended	Be sure to use

UCCS TASK SPECIFIC PPE REQUIREMENTS

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body [1]	Foot	Hair	Hearing	Respiratory	Special Notes
					clothing, necklaces, headphone cables, lanyards, ties, etc.)			no headphones		push sticks
49.	Changing out compressed gas cylinders, affixing regulator to cylinder	Eye damage foot damage	Safety glasses			Closed Toe/Heel – low heel height				
50.	Use of compressed air for cleaning equipment	Eye damage	Dust goggles							
51.	Working with Cryogenics	Eye damage, skin damage	Goggle	cryogenic gloves						
52.	Filling cryogenic cylinders/dewars	Eye damage, skin damage	Goggles, face shield	cryogenic gloves	lab coat - leg coverings	Closed Toe/Heel – low heel height	Confined			

[1]Lab coats must be fully buttoned and extend to at least the knees. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting.

HAZARDS in VISUAL AND PERFORMING ARTS

Note that engineering controls such as machine guards and shields should be used where possible to minimize personal exposure.

	Activity	Potential Hazard	Eye/Face	Hand/Arm	Body[1]	Foot	Hair	Hearing	Respiratory	Special Notes
53.	Dispensing of small (<500 ml) of solvent	Eye damage, skin damage	Safety glasses or chemical splash goggles							
54.	Use of spray paints	Eye damage, skin damage Respiratory							Need good ventilation	
55.	Cleaning of equipment (i.e. brushes, etc.) with organic solvents	Eye damage, Skin damage respiratory damage	Safety glasses	light latex or nitrile gloves						
56.	Welding or Brazing	See Physical Hazards								
57.	Drill Presses, etc.	See Physical Hazards								
58.	Saws, etc.	See Physical Hazards								
59.	Photo chemical preparations	See Chemical Hazards								
60.	Film Developing	Skin damage		When hands are immersed – use latex or nitrile gloves						

[1]Lab coats must be fully buttoned and extend to at least the knees. Leg coverings means pants or long skirts with no skin exposed below the waist. Pants should preferably be loose fitting.