5 STEP HAZARD MANAGEMENT PROCESS

Step 1 — Planning or pre start check

Consider the sequence of steps involved in carrying out the task from start to finish.

- ☐ Does the activity expose the worker to any hazards which could result in a significant injury or illness (e.g. medical treatment, hospitalisation)? (Refer to the list of examples on this Appendix, pages 2 - 5 as a guide)
- ☐ Does the activity involve the use of an item of plant/equipment or chemical in a different way to how the manufacturer intended?
- ☐ Does the task involve the use of a Hazardous chemical or nanoparticles?
- ☐ Is the activity an event (e.g. function such as an open day) or require the co-ordination of a number of tasks which could impact on the safety of the worker(s) completing the task or others in the vicinity?
- ☐ Is the activity to be conducted in a different workplace/environment to normal and modification to the workplace or process is required?
- ☐ Are there any concerns/uncertainty that the activity (e.g. tools and equipment, chemicals, the work environment, the physical/mental/emotional demands of the tasks) may place a worker at risk of injury/illness?

If yes to any of the above, do not start the activity until you reach step 5

If no to all of the above

Is there an existing Risk assessment (RA) for the activity on file?

No Risk assessment held

Select and complete the appropriate RA template

Single task (Appendix B1); or

Multiple tasks (Appendix B2); or

Short Form (Appendix B3)

Yes – A Risk assessment held

Check whether the hazards and control measures are correct for your activity.

If no

Go to step 2 and complete a new Risk assessment (Appendix B1, B2 or B3)

If Yes

Go to step 5

No formal Risk assessment is required

It is an activity which is considered low risk.

There is no expectation that an injury/illness will occur. If there was an injury/illness, treatment would be very minor/negligible (e.g. first aid treatment requiring a band aid).

Complete the activity safely and in accordance with:

- ❑ the manufacturer's instruction; and/or
- ❑ Safety Data Sheet; and/or
- ❑ any information/ instruction/training provided.

Seek assistance from your Supervisor/Person in control of the area/activity if you are unsure of the method of work or have any concerns.

Step 2 — Identify the hazards

- ☐ Identify the hazards that could cause harm (injury/illness) through immediate or long term exposure and how/when the worker is exposed to the hazard(s) during the activity. An activity may have many different hazards. (Refer to pages 2 – 5 of this Appendix for guidance).

Step 3 — Assess the level of risk

Based on the nature of the activity and the hazard(s) identified

- ☐ Determine the likelihood and consequences of an injury/illness using the Risk assessment table on the RA template.

Step 4 — Control the risk

- ☐ Determine the controls to ensure the highest level that is reasonably practicable under the Hierarchy of controls (see page 6 of this Appendix) are selected, to either eliminate/minimise the risk.

In consultation with your Supervisor/Person in control of the area/activity:

- ☐ Ensure that specific control measures that are mandated are documented on the RA and that these have a direct correlation with the hazard they are controlling.
- ☐ Obtain the relevant authorisations to complete the activity, based on the level of residual risk (i.e. the remaining risk after controls are in place).

Step 5

Complete the activities safely and in accordance with the Risk assessment.
Ensure your own safety and the safety of others for the duration of the activity.
Review the Risk assessment if the conditions change e.g. new hazards are identified.

HAZARD IDENTIFICATION (EXAMPLES)	If the hazard is applicable to the activity, then transfer the hazard and how the worker could be exposed onto your Risk assessment template

HAZARD IDENTIFICATION: Stop and think. What could cause harm?	
Identify each hazard that is part of this work process	**Examples of how/when the worker could be exposed to the hazard (e.g. what is the route of exposure?)**
Hazardous chemical Use of: ☐ a corrosive ☐ an explosive ☐ an acid ☐ a flammable liquid/solid/gas ☐ a toxic poison Including hazardous waste Where practical name the category or name of chemical on the Risk assessment. The SDS for the chemical will provide additional information. Use of a **Nanomaterial**	☐ Could the worker be exposed to potential harm via inhalation? ☐ Could the worker be exposed to potential harm via skin absorption? ☐ Could the worker be exposed to potential harm via ingestion? ☐ Could the chemical splash into the worker's eyes? ☐ Could the worker be required to work with the chemical for long periods of time? ☐ Is the chemical a carcinogen, mutagen, reproductive toxicant or sensitisation agent? ☐ Could an accidental spill place the worker and others in the vicinity at risk? ☐ Is the chemical being used in an enclosed space? ☐ Could other workers make contact with the chemical or contaminated surfaces (e.g. during cleaning, contractors entering the space)? ☐ Does the chemical require decanting, spraying, heating? ☐ Could the chemical cause a fire and explosion if there is a source of ignition? ☐ Could exposure to the chemical require an immediate first aid response (e.g. antidote, emergency shower)? ☐ Is there the potential for vapour accumulation? ☐ Is the chemical an asphyxiant? ☐ Do the storage containers need to have impact protection in place? ☐ Are there specific transfer/transport arrangements required for the chemical? ☐ Are there specific storage arrangements required for the chemical? ☐ Could the worker be exposed to nano-sized particles that could enter the body through inhalation, ingestion or contact through the skin? Refer to the Chemical Safety Management Handbook chapter and FAQ Nanomaterials for further information on the risk assessment process.
Hazardous Plant/Equipment ("Plant") (During operation) ☐ Rotating/moving parts (e.g. shafts, pullies, sprockets, gears, belt conveyors) ☐ Hard surfaces moving together ☐ Scissor or shear action ☐ Eject objects (parts, components, waste) ☐ Sharp edge – moving/stationary ☐ Ignition sources (flame or spark) ☐ Compressed air or high pressure fluid ☐ Electricity ☐ Explosive or flammable atmosphere ☐ Ergonomic (e.g. equipment design/layout) ☐ Mobile plant/equipment (e.g. forklifts, pallet jacks, earthmoving equipment) ☐ Heat (radiated or conducted) or steam ☐ Harmful noise ☐ Poorly positioned control levers or buttons	Could the plant/equipment: ☐ entangle a person's hair, clothing, gloves, jewellery, in moving parts? ☐ crush a person (e.g. material fall off the plant, uncontrolled/unexpected movement of the plant)? ☐ stab, puncture or strike e.g. due to coming into contact with sharp or flying objects? ☐ shear a body part (e.g. between two parts of the plant/between the plant and a work structure)? ☐ expose the worker to live electrical conductors (e.g. proximity, overload of electrical circuits)? ☐ expose the worker to gases/vapours/liquids/dusts/other substances triggered by the operation? ☐ explode or implode, or reach high temperatures? ☐ exceed safe noise levels (e.g. more than 85 decibels over a normal shift or a single noise level above 140 decibels) due to very loud impact or explosive sounds? ☐ require the worker to adopt poor ergonomic posture/repeat the same movements? (see Hazardous Manual Activity)? ☐ overturn, collide with another person or thing (e.g. moving powered plant)? ☐ malfunction (e.g. is an industrial robot/remotely/automatically energised plant at the workplace)? ☐ expose the worker to hazardous levels of vibration (to whole or part of body)? ☐ cause a significant burn ☐ require energy sources to be isolated e.g. for cleaning, maintenance? ☐ require the operator to climb onto the equipment during operation? ☐ be operated in a confined space? (See FAQ Confined space for additional guidance) ☐ controls be inadvertently bumped or knocked? ☐ require extension leads which present electrical hazards if damaged or wet? ☐ require the operator to make adjustments to the mechanism of machinery while the machine is in motion/operation? ☐ require the use of Hazardous chemicals during operation, cleaning, maintenance? (see section above)

HAZARD IDENTIFICATION (EXAMPLES)	If the hazard is applicable to the activity, then transfer the hazard and how the worker could be exposed onto your Risk assessment template

HAZARD IDENTIFICATION: Stop and think. What could cause harm?	
Identify each hazard that is part of this work process	**Examples of how/when the worker could be exposed to the hazard (e.g. what is the route of exposure?)**
Hazardous manual activity The task requires a person to lift, lower, push, pull, carry or otherwise move, hold or restrain any person, animal or thing involving one or more of the following: ☐ repetitive or sustained force ☐ high or sudden force ☐ repetitive movement ☐ sustained or awkward posture ☐ exposure to vibration	Could the activity require: ☐ carrying objects over long distances or a load that is unbalanced/unstable/unpredictable? ☐ lifting/lowering/carrying an object that cannot be positioned close to the body? ☐ the use of a tool requiring continuous finger/pinch/open-handed grip or tight squeeze grip? ☐ the handling of frightened/resistant/unpredictable animals or a person? ☐ repetitive use of the same muscle groups (e.g. computer tasks, bending/twisting)? ☐ repeated reaching for an object (e.g. beyond normal reach, whilst sitting, with arms overhead)? ☐ transfer of an awkward/heavy item from one level to another (e.g. stairs, from the floor)? ☐ the worker to complete the task where the workplace environment poses a risk? ☐ a level of skill/experience or more than one worker due to the nature of the load?
Heavy lifting using mechanical lifting equipment (e.g. a hoist, a crane, a power shovel, a telescopic/telehandler, fork lift truck, elevating work platforms, passenger lifts/hoists) Note If engaging a Contractor for this work, refer to the Contractor Safety Management HSW Handbook chapter which includes the requirements for Permission to work.	Could the: ☐ activity crush another person due to the impact of moving objects or loads falling because they are not properly slinged or the wrong type of sling is used? ☐ plant/equipment strike a pedestrian? ☐ plant/equipment collapse or fall over due to improper fixation or strong wind, unsafe loads, loads exceeding the safe weight limits? ☐ plant/equipment or the load trap/crush a worker during the lift/transfer? ☐ the operator fall from a height e.g. fall from the lifting platform or when the platform moves? ☐ worker be exposed to a hazard when positioning the load? ☐ work environment interfere with communication between workers or concentration? ☐ load come into contact with overhead electrical cables, other structures or other people? ☐ plant/equipment not be fit for purpose? ☐ operator not have the necessary skills qualifications to undertake the tasks?
Radiation (Exposure to) ☐ Ionising radiation ☐ Sealed sources ☐ Un-sealed sources	☐ Could the worker be exposed to high powered lasers, x-ray machines and transilluminators? ☐ Could the worker be exposed to potential harm by breathing in radioactive dust? ☐ Could the worker absorb the radiation through their skin? ☐ Is the worker required to work with materials containing radioactive iodine? ☐ Could the worker be exposed to non-solar sources of radiation such as arc welding?
Biological hazards (Exposure to) ☐ Blood, tissues, saliva, mucous, urine and faeces, sewage ☐ Toxins, poisons, venom ☐ Spores, fungi and bio-active substances ☐ Biological vectors/transmitters of disease ☐ Communicable diseases ☐ Animal diseases and infections that have the potential to infect humans (e.g. Q-fever, Avian flu, Hendra virus) ☐ Harmful plants ☐ Animal and bird droppings	☐ Could micro-organisms enter the body through the respiratory system? ☐ Could there be transmission through contact with body fluids of the infected person/animal? ☐ Could the worker come into contact with contaminated objects? ☐ Is the worker in contact with laboratory cell cultures, soil, plant materials, organic dusts, wastewater or sewerage? ☐ Is the worker working with animals? ☐ Could the worker be exposed to a venomous bite or sting? ☐ Is the worker working in a hospital, dental practice, health care setting (including home healthcare)?
Psychosocial/stress/duress (Exposure to) ☐ Personal threat ☐ Fatigue	☐ Could the worker be exposed to trauma? ☐ Could the worker be exposed to occupational violence, aggression, abuse or assault? ☐ Could the worker be exposed to constant work demands (e.g. heavy workload, physical and/or mental exertion)? ☐ Is the worker, working alone for extended periods or in remote locations? ☐ Is the worker meeting with clients that are unfamiliar and/or in an unfamiliar environment when on their own?

HAZARD IDENTIFICATION (EXAMPLES)	If the hazard is applicable to the activity, then transfer the hazard and how the worker could be exposed onto your Risk assessment template

HAZARD IDENTIFICATION: Stop and think. What could cause harm?	
Identify each hazard that is part of this work process	**Examples of how/when the worker could be exposed to the hazard (e.g. what is the route of exposure?)**
Fall from one level to another / Falling objects	☐ Could the worker fall from a cliff?) ☐ Could the worker fall from a ladder, work platform or item of plant/equipment? ☐ Could the worker fall from a roof or through a structure, fragile surface? ☐ Could the worker fall into an unguarded hole in the floor such as hatchway, inspection hole, pit, tank or machinery? ☐ Could the worker be hit by a falling object?
High risk travel (Travel to a high risk destination)	☐ Is the worker travelling to a DFAT level 3 destination? i.e. Reconsider your need to travel (This level means that there are serious and potentially life threatening risks that make the destination unsafe for tourism and unsuitable for most travellers. This could be due to an ongoing threat of terrorism or kidnapping, frequent incidents of violent crime, ongoing civil unrest, widespread disease, or other safety risks including a natural disaster.) ☐ Is the worker travelling to a DFAT level 4 destination? i.e. Do not travel (This level means that the security situation is extremely dangerous. This may be due to a high threat of terrorist attack or kidnapping, ongoing armed conflict, violent social unrest, or critical levels of violent crime. It is often a combination of these.) The DFAT Smart traveller website provides additional information. The Travel & Entertainment Policy & Procedures sets out the approval process for travel to a high/very high risk destination.
Operation of a drone (Regardless of the size or if operated indoors or outdoors)	☐ Is the worker operating a drone for work purposes? Refer to the University website - The Unmanned Research Aircraft Facility (URAF) for all compliance requirements including risk assessments. Strict protocols apply to all University activities requiring the operation of a drone to meet the requirements for Remotely Piloted Aircraft Systems under the Civil Aviation Act and Regulations. All operations regardless of drone type or activity must be approved by the University's Chief Remote Pilot. Non-compliance by any University staff or students could lead to the cancellation of our licence which would impact on all University pilots and mean that all University drones would be grounded. No insurance cover will apply.
Electrical ❑ Electric shock (working on or near power lines or live power) ❑ Hidden wiring/cables (wall or ground penetration)	☐ Could the worker be penetrating a wall or ground and there is the potential for contact with electrical wiring/cables? ☐ Could the worker be operating electrical equipment near water (beyond what the manufacturer intended) or outdoors? ☐ Could the equipment be chewed on by animals? ☐ Is the electrical cord subject to crushing or crimping? ☐ Could the equipment be in direct contact with dust, vibration, heat, or corrosive chemicals that could cause damage to the item? ☐ Could the equipment be immersed in water or in an environment where there is condensation on the floors or walls?
Boating and diving activity	☐ Could the worker be at risk of drowning? ☐ Could the worker be exposed to weather extremes? ☐ Could the worker require emergency medical treatment during the activity? ☐ Could there be communication issues (e.g. by virtue of location or isolation) ☐ Could equipment failure harm the worker? ☐ Could the worker come into contact with dangerous marine animals?
Noise and sound (Produced during an activity)	☐ Could the worker be exposed to noise levels approaching/greater than safe exposure standards (including music) >85dB(A) or peak level approaching/greater than 135dB(C) for any period of time?

HAZARD IDENTIFICATION (EXAMPLES)	If the hazard is applicable to the activity, then transfer the hazard and how the worker could be exposed onto your Risk assessment template

HAZARD IDENTIFICATION: Stop and think. What could cause harm?	
Identify each hazard that is part of this work process	**Examples of how/when the worker could be exposed to the hazard (e.g. what is the route of exposure?)**
Confined space entry ☐ Poor air quality/insufficient oxygen ☐ Chemical exposure ☐ Extreme temperature ☐ Flooding ☐ Suffocation, crushing, engulfment	☐ Could the worker be required to enter into an enclosed or partially enclosed space that is not designed or intended primarily to be occupied by a person (e.g. a pit, tank, vat, pipe, duct, silo, container)? A specific Permit to Work is required to address the hazards. Refer to the HSW Handbook Confined Space FAQ
Operation of a **Firearm**	☐ Could the worker be required to operate a firearm or be part of a work related activity where someone is operating a firearm? Specific requirements and licences are required to meeting the requirements of the Firearms Act and Regulations. Refer to the HSW Handbook chapter Firearms Safety Management for information.
Hot work (e.g. welding) ☐ Burns, fire and heat ☐ Dust, smoke and fumes ☐ Light radiation ☐ Asphyxiation	☐ Is the worker required to do welding, grinding, thermal or oxygen cutting or heating or other related heat producing or spark-producing operations? A hot-work permit is required for this activity. Refer to the HSW Handbook Hot work FAQ for further information on hazard management.
Other ☐ Off campus activity Remote or isolated work ☐ Temperature extremes (hot or cold)	☐ Is the worker required to work in a remote location that would require specific arrangements to be in place for rescue and/or medical assistance? (Refer to the Off campus activities FAQ which includes a risk assessment decision tool and a specific Risk assessment template for "Off campus activities"/Field Work.) ☐ Is the worker required to work in a location where they could suffer hyperthermia (i.e. body is overheated), or work in a cold room?

DESCRIPTORS FOR ASSESSING THE LEVEL OF RISK

Likelihood Table

CATEGORY	DESCRIPTION
Almost certain	There is an expectation that an event/incident will occur.
Likely	There is an expectation that an event/incident **could occur** but not certain to occur.
Possible	This expectation lies somewhere in the midpoint between "could" and "improbable". May happen occasionally.
Unlikely	There is an expectation that an event/incident is doubtful or **improbable** to occur.
Rare	There is no expectation that the event/incident will occur.

Consequences Table

CATEGORY	DESCRIPTION
Severe	Injury resulting in death, permanent incapacity.
Major	Injury requiring extensive medical treatment (e.g. hospitalisation), or activities could result in a Notifiable occurrence.
Moderate	Injury requires formal medical treatment (e.g. hospital outpatient/doctors visit) Activities could result in an Improvement/Prohibition Notice.
Minor	Injury requires first aid treatment.
Negligible	Injury requires minor first aid (e.g. bandaid), or result in short term discomfort (e.g. bruise, headache, muscular aches), no medical treatment.

Risk matrix

Likelihood	Consequences				
	Negligible	Minor	Moderate	Major	Severe
Almost Certain	Medium	High	Very High	Very High	Very High
Likely	Medium	Medium	High	Very High	Very High
Possible	Low	Medium	High	High	Very High
Unlikely	Low	Low	Medium	Medium	High
Rare	Low	Low	Low	Medium	Medium

HAZARD MANAGEMENT – HIERARCHY OF RISK CONTROL

The process to eliminate, or where this is not possible, manage the risks to as low a level as is reasonably practicable. They are listed below in order of most to least effective and are required to be recorded on your Risk assessment
A combination of the controls set out may be used to minimise risks if a single control is not sufficient for the purpose.

Refer to any relevant Approved Codes of Practice or Australian Standard, Safety Data Sheet or Handbook chapter(s) which outline the controls which are to be followed, unless there is another solution which achieves the same or a better standard of health and safety.

	Hierarchy of control		Examples of control measures	
HIGHEST	**Level 1**	**Elimination**	• Not introducing the hazard into the workplace. • Designing out the hazards before they are introduced. • Removing the hazard completely. • Not conducting the activity.	MOST
LEVEL OF HEALTH AND SAFETY PROTECTION	**If this is not practicable then** ↓			RELIABILITY OF CONTROL MEASURES
	Level 2 Where it is not reasonably practicable to eliminate the hazards and associated risks.	**Substitution**	• Replacing or substituting the hazard with something safer. Record what you have substituted so it is clear to the worker.	
		Isolation	• Isolating the hazard from the people by distance or using barriers. Record what isolation controls need to be in place so it is clear to the worker.	
		Engineering	• Installing/using a control measure of a physical nature, including a mechanical device or process (e.g. trolleys, hoists, guards, residual current devices, fume-hoods, extraction/ventilation systems, RCD protection). Record what specific engineering controls are in place so it is clear to the worker.	
	↓			
	Level 3 These control measures do not control the hazard at the source. They rely on human behaviour and supervision, and used on their own tend to be the least effective in minimising risks.	**Administrative**	• Documenting a Safe operating procedure (SOP) and include in the induction program for all staff required to perform the activity. • Developing a proficiency based training program if required by the risk assessment (see definitions) (Workers may be trained against the SOP Appendix C or other assessment criteria). • Training workers to use control measures implemented when carrying out the activity. • Introducing a second operator. • Providing signage or warning labels. • Restricting access. • Maintenance and testing programs. • Changing the work organisation (e.g. relocating equipment or items, rotating workers between different activities). (Record on the Risk assessment the specific Admin controls that are in place so they are clear to the worker.)	
LOWEST	Exposure is only limited if the worker wears and uses the PPE correctly.	**Personal Protective Equipment (PPE)**	Requiring the use of one or more of the following: • ear protection (ear muffs); • respirators, face masks; • hard hats/helmet; • gloves, aprons; • eye protection (glasses, shield, visor); and • non-slip footwear, appropriate clothing. (Record on the Risk assessment the specific PPE to be worn so it is clear to the worker.)	LEAST