

RISK ASSESSMENT

A Risk Assessment is a simple tool to look at an activity such as a task, project or event to identify health and safety risks that are likely to pose a threat to a person's safety or impact operations of the University and to establish appropriate risk controls to minimise harm.

KEY STEPS SUMMARISED:

1. Provide summary of activity.
2. Break the activity down into a series of steps (from start to finish).
3. Identify potential hazards for each step. Use the [Hazard Identification Checklists](#) for help.
4. Assess the inherent risk (*before* control measures) for each hazard identified by:
 - a. Evaluating the possible consequence of the hazard using the [Consequence Scale](#).
 - b. Evaluate the likelihood of that consequence using the [Likelihood Scale](#).
 - c. Determine risk rating of each hazard using the [University Risk Matrix](#).
5. Develop appropriate risk control measures to eliminate or reduce the risks.
6. Assess the residual risk (i.e. *after* control measures) once again by:
 - a. Evaluating the possible consequences of the hazard using the [Consequence Scale](#).
 - b. Evaluate the likelihood of that consequence using the [Likelihood Scale](#).
 - c. Determine risk rating of each hazard using the [University Risk Matrix](#).
7. Identify persons responsible for implementing and monitoring relevant steps. Ensure they have appropriate licenses and qualifications.
8. Determine highest remaining residual risk.
9. Determine if a Safe Work Procedure (SWP) is to be developed from the Risk Assessment.
10. Seek delegation sign off in accordance with the University [Schedule of Risk Delegations](#).
11. Ensure all persons involved in the activity have read, understand and sign the risk assessment before work starts.

The following Risk Assessment template has been provided in a word format to enable you to type in information and to electronically transmit and save the document. Refer to the *Project / Task Risk Assessment Procedure* for instructions and guidance on how to use this *Risk Assessment Template*. If you require assistance with reviewing your assessment, first speak with your colleagues, line supervisor or elected Health and Safety Representative. If further assistance is required, please contact the University Work Health and Safety Unit via health.safety@utas.edu.au.

STEP 1.												
TITLE OF RISK ASSESSMENT (RA):			<u>First Year Physics Labs</u>				ORG UNIT:		CoSE / SNS / Physics			
RA NO.		101/2020		VERSION:		1		CREATION DATE:		2020-01-26	REVIEW DATE:	
SUMMARY OF ACTIVITY:			Undergraduate student introductory practical training in physics. Physics Practicals for first-year units in the physics major (and the foundation unit. These are 2-3 hours in duration, 1/wk in semester 2, 1/2wks in semester 1, one or two occasions in summer. Students work in groups of 2-4, each on the same experiment, which has been set up in advance by the lab manager and demonstrators. The experiments are changed each week according to the schedule set by the unit coordinator(s).									
LOCATION OF ACTIVITY:			Sandy Bay Campus, Physics Building (Building 13), Room 236 (Lab 1): SB.AU14.L02.236									
RISK ASSESSMENT CREATED BY / CONSULTED WITH:						POSITION TITLE:						
Name: Andrew Cole						Acting Head of Discipline						
Name: Jane Higgins / Keith Bolton						Acting Admin Assistant / Acting Lab Manager						
Name: Danijela Ivkovic / Simon Ellingsen / Stanslav Shabala						Unit Coordinators (KYA004/101/102) (UC)						
STEP 2.		STEP 3.		STEP 4a.	STEP 4b.	STEP 4c.	STEP 5.		STEP 6a.	STEP 6b.	STEP 6c.	STEP 7.
Ref No.	SPECIFIC ACTIVITY STEPS	IDENTIFY POTENTIAL HAZARDS	INHERENT RISK			RISK CONTROL MEASURES	RESIDUAL RISK			Actioner / Initials		
			Consequence	Likelihood	Risk Rating		Consequence	Likelihood	Risk Rating			
1	Set up/remove	Manual handling can	Minor	Low	Low	<ul style="list-style-type: none"> Hierarchy of Control – Elimination, Substitution, Isolation, Engineering, Administration, Personal Protection. Additional information can be attached. 	Minor	Rare	Low	JH/		

	equipment	result in strain injury; confusion or haste leads to accident. Slip/drop/fall hazards				possible; items stored on high shelves are lightweight only, to be accessed with a step platform; sufficient staff available to move items; no student access until set up complete; no liquids in lab. PPE: closed-toe shoes.				KB
2	Use of electrical equipment	Trip injury; overload of electrical circuits; shock hazard	Mod	Possible	Mod	Tested and tagged leads only in use; use of benches with in-built GPOs eliminates use of extension leads over floor space. No exposed wiring, only low voltage DC circuits wired by students, no food or liquids permitted in the lab. Electrical equipment tested and tagged IAW AS/NZS 3760. Administrative controls: supervision and training.	Mod	Rare	Low	JH/ KB
3	Planning	Poor/inadequate planning leads to inefficiency or dissatisfaction; risk to reputation	Mod	Possible	Mod	Lab activities, requirements, and procedures reviewed at least four weeks in advance of each semester at a meeting with unit coordinators. Demonstrators assigned from volunteer HDR students who are trained; list of trained demonstrators kept current/complete by Head of Discipline; planning documented in emergency management checklist.	Minor	Unlikely	Low	AC / JH / UC
4	Accessibility	Close spacing of benches and narrow	Mod	Possible	Mod	Aisles and access paths between benches to be kept clear of items; benches at rear of room are	Minor	Unlikely	Low	JH / KB

		aisles for access.				handicap-accessible; training to maintain orderly movement in an emergency.				
5	Student or Staff Behaviour: reaction to deadlines	Fatigue/perceived pressure leads to unsafe act	Mod	Rare	Low	Sufficient staff identified; reasonable timelines for activities; supervision	Minor	Rare	Low	AC / UC
6	Student Behaviour: Inappropriate actions	Security breach/issues – damage to equipment or personnel	Mod	Unlikely	Mod	No student access without induction and sign-off; supervision in sensitive areas; all doors locked unless required for access.	Mod	Rare	Low	JH / UC
7	Student or Staff Behaviour: response to events	Lack of knowledge/application of risk management measures	Minor	Possible	Low	Staff and students briefed on the day; lab manager present in building during scheduled lab use periods; spot checks by head of discipline and unit coordinators.	Insig	Unlikely	Low	JH / UC
8	Experiments using Laser	Accidental skin or eye exposure to laser light	Minor	Likely	Mod	Isolate hazard: lab blinds closed to avoid public exposure. No polished surfaces within the beamline to eliminate reflections. Laser units are held securely in experimental setup, well below eye level. Engineering Controls: power limited to <1 mW, visible wavelengths only (considered safe for accidental viewing IAW AS/NZS 2211.1)—class II lasers. Administrative Controls:	Insig	Unlikely	Low	JH / KB / UC

						supervision, correct training				
9	Bungee Egg experiment	Working at height	Mod	Possible	Mod	Elimination: Only working at heights <2 m. Engineering Controls: quality stable ladder provided. Administrative Controls: supervision, correct training	Minor	Unlikely	Low	JH / KB / UC
10	Elasticity experiment	Wire or nylon breakage (fragmentation or whiplash; mass carrier gravity hazard)	Minor	Almost Certain	Mod	Engineering Controls: wires maintained by lab manager and are free from kinks prior to experiment, safety retainer fitted to prevent mass carrier falls. Administrative Controls: Supervision, correct training. PPE: Safety glasses provided for all students and demonstrators in the Lab. No bare feet or open shoes.	Minor	Unlikely	Low	JH / KB / UC
							STEP 8.	HIGHEST REMAINING RESIDUAL RISK		Low
							STEP 9.	SOP to be developed? Y/N		Y

STEP 10. DELEGATION SIGN OFF (In accordance with the [University Schedule of Risk Delegations](#))

RESIDUAL RISK	APPROVAL REQUIRED TO PROCEED:	APPROVAL SIGNATURE:	APPROVAL DATE:
Extreme (E)	Approval must be obtained from a member of the University Council (on recommendation from Audit and Risk Committee)		
High (H)	Approval must be obtained from Profile A or above (Executive Dean, Executive Director Operations or Senior Executive (UET), Board Member)		

Moderate (M)	Approval must be obtained from Profile B or above (Head of School / Institute, Director, Business / College Manager, Deputies, PVC, CSO, CFO, ED, CoS, General Counsel, CIO, CEO)				
Low (L)	Approval must be obtained from Profile C or above* (Head of Discipline / Centre / Department, Associate Dean, Course Coordinator, Operations / Project / School / Senior Manager)				
	<i>*Profile B or above (or nominated delegate) must approve Risk Assessment if it is used to develop a Safe Work Procedure.</i>				
STEP 11. NAMES OF PERSONS AND JOB TITLES OF PERSONS INVOLVED IN THE ACTIVITY/TASK:					
All participants (including students and volunteers) must sign before they are permitted to be involved in the Activity. <i>By signing below, participants acknowledge they have read and understand the risk assessment and agree to comply with all steps and control measures:</i>					
NAME	SIGNATURE	DATE	NAME	SIGNATURE	DATE
Andrew Cole					
Unit Coordinators and Demonstrators to Sign Below:			ROLE		

UNIVERSITY OF TASMANIA RISK RATING MATRIX

LIKELIHOOD	CONSEQUENCE				
	Insignificant	Minor	Moderate	Major	Catastrophic
Almost Certain	Mod	Mod	High	Ext	Ext
Likely	Low	Mod	High	Ext	Ext
Possible	Low	Low	Mod	High	Ext
Unlikely	Low	Low	Mod	High	High
Rare	Low	Low	Low	Mod	High

LIKELIHOOD SCALE	
Descriptor	Description
Almost certain	The event is expected to occur in most circumstances / commonly repeating / occurs weekly
Likely	The event will probably occur in most circumstances / known to occur / occurs monthly
Possible	The event might occur, say yearly / has a 1 in 20 chance of occurring
Unlikely	The event could occur at some time, say once in every 10 years / say 1 in 100 chance of occurring
Rare	Event may only occur in only exceptional circumstances / less than a 1% chance of occurring

Consequence Scale								
	General Definition	Learning and Teaching	Research	Community and Environment	Enablers			
					Legal & Reputation	Service Delivery and Infrastructure	Financial & Commercial	People, Safety and Wellbeing
Catastrophic	An impact which prevents the University from achieving its key strategic objectives, value and ability to operate.	<ul style="list-style-type: none"> High profile academic quality or integrity event that will cause a loss of public and government confidence in the University's brand and value of its educational credibility. Non-compliance with Learning & Teaching quality frameworks, e.g. AQF standards, in flagship course offerings resulting in suspension. Loss or suspension of accreditation of the University. 	<ul style="list-style-type: none"> High profile research integrity or misconduct event(s) that affects the public and government's confidence in the University's ability to deliver quality research outcomes. Loss of ability to compete for research funding, resulting in systemic loss of research talent. Significant reduction in research rankings and loss of major research clusters. 	<ul style="list-style-type: none"> Complete loss of trust by affected community leading to social unrest and outrage. Long term and widespread effects - very serious environmental effects with significant impairment of ecosystem function. Significant environmental liability or remediation cost to the University. 	<ul style="list-style-type: none"> Imprisonment of University executive, fatality or major insurance claim. May result in significant litigation, including class actions. Reputation and standing of the University seriously affected nationally and internationally. Serious public or media outcry (International coverage). Significant breakdown in strategic and/or business partnership operations. 	<ul style="list-style-type: none"> Significant event(s) which has derailed University objectives and requires significant additional resources from which to recover. The University may suffer prolonged loss of service in core activities and critical infrastructure during critical operational periods, e.g. enrolment, census date, exams or payroll periods, etc. 	<ul style="list-style-type: none"> Whole of University Income Statement impact of > \$50m. Loss on investments which severely depletes University reserves, unable to meet operational costs and requires a recovery period of 3 years or more. 	<ul style="list-style-type: none"> Loss of life, permanent disability or injury to multiple persons. Sudden or unexpected loss of a number of key personnel. Major staff dissatisfaction including worker strikes.
Major	The impact would threaten the ability of the University to achieve its strategic objectives in the medium term (18 – 36 months).	<ul style="list-style-type: none"> Academic quality and integrity events that will create dissatisfaction by students, resulting in lasting public and media scrutiny as well as significant drop in overall QILT indicators of the University. Official notification or warning from regulators to revoke accreditation of the University. Loss of accreditation to flagship courses significantly impacting student load. 	<ul style="list-style-type: none"> Research integrity / misconduct event in key research clusters, impacting research output and rankings. Loss of some funding bodies, research or consultancy. Substantial reduction in research rankings and loss of key research talent and clusters. Lost opportunity to commercialise on major research outputs. 	<ul style="list-style-type: none"> Prolonged community outrage which will have an impact to the University's reputation – requires a University-wide response. Significant harm - serious environmental effects with some impairment of ecosystem function. Relatively widespread medium - long term impacts, requiring remediation, where ecosystem will recover over time once clean-up has been completed. Major environmental liability or remediation cost to the University. 	<ul style="list-style-type: none"> Significant breach of Act, regulations, or consent conditions that is expected to attract regulatory attention. Investigation prosecution and/or major fine possible. Embarrassment for the University and long lasting adverse media coverage. Significant adverse national media / public coverage. Reputation adversely impacted with a significant number of stakeholders / breakdown in strategic and/or business partnership. 	<ul style="list-style-type: none"> Major event(s) that, with prioritised and focused management, will be endured. Loss of 13-26 weeks activity or work from such activity causing distress from students and staff leaving a poor and lasting student/staff experience. Critical infrastructure service loss for >1 month. 	<ul style="list-style-type: none"> Whole of University Income Statement impact of \$25m-\$50m. Loss on investments which depletes the University's reserves and requires a recovery period of 2 – 3 years. 	<ul style="list-style-type: none"> Permanent disability or impairment to one or more persons. Low retention rates of key personnel. Long term decline in staff morale.

Risk Rating Matrix (appended to Risk Management Policy)

Consequence Scale								
	General Definition	Learning and Teaching	Research	Community and Environment	Enablers			
					Legal & Reputation	Service Delivery and Infrastructure	Financial & Commercial	People, Safety and Wellbeing
Moderate	The impact would threaten the ability of the University to meet its strategic objectives in the short term (12 – 18 months).	<ul style="list-style-type: none"> Academic quality and integrity issues which affects QILT indicators (such as SES and CEQ) of the University or less than 25% of study areas. Limited accreditation to flagship courses impacting student load. 	<ul style="list-style-type: none"> A research integrity issue(s) or non-compliance(s) which will be of interest and closely monitored by regulators or granting bodies. Service issue causing/contributing to loss of research or consultancy projects. 	<ul style="list-style-type: none"> Dissatisfaction from specific sections of the community and requires active management and University response. Moderate harm - measurable impairment on biological or physical environment but not affecting ecosystem function. Short-medium term impacts, where the ecosystem will recover quickly with or without intervention. Moderate environmental liability or remediation cost to the University. 	<ul style="list-style-type: none"> Major breach of Act, regulation or consent conditions with potential for regulatory action such as issuance of a formal notice, a fine or prosecution. Student and or community concern, heavy local media coverage/criticism by NGOs. Reputation impacted with some stakeholders. 	<ul style="list-style-type: none"> Significant event(s), which can be managed under special circumstances. Loss of 6-13 weeks activity or work from such activity. Critical infrastructure service loss of <1 month. 	<ul style="list-style-type: none"> Whole of University Income Statement impact of \$10m-\$25m. Loss on investments which impacts on reserves and the financial performance of the University. 	<ul style="list-style-type: none"> Hospitalisation required. Significant lost time and restricted or modified duties required for longer than 1 month. Inability to attract and retain key personnel in identified roles or locations. Low staff morale in affecting a large section of the university.
Minor	The impact would pose some obstacles for the University to achieve current year objectives (within 12 months).	<ul style="list-style-type: none"> Isolated academic quality and integrity issues which impacted less than 20% of student cohort with manageable impact on student satisfaction and load. Loss of accreditation of smaller courses. 	<ul style="list-style-type: none"> Isolated research integrity or misconduct occurrences which does not impact research output or funding eligibility. Service issue causing/contributing to loss of research or consultancy project. 	<ul style="list-style-type: none"> Isolated dissatisfaction raised by a small section of the community which can be managed operationally. Transient harm - minor effects on biological or physical environment. Minor short - medium term damage to a localised area or that ceases once the event is over. Minor environmental liability or remediation cost. 	<ul style="list-style-type: none"> Minor non-compliances and breaches of Acts, regulations or consent conditions. Not likely to result in regulatory action, may result in infringement notice. Issue raised by students and/or local press/ minor, adverse local public or media attention and complaints. 	<ul style="list-style-type: none"> An event(s), the consequences of which can be absorbed but management effort is required to minimise impact. Loss of 5 days - 6 weeks activity or work from such activity. Critical service interruption not back in agreed time. Problems are known to the University and may encounter disruption or inconvenience in core activities. 	<ul style="list-style-type: none"> Whole of University Income Statement impact of \$5m-\$10m. Loss on investments which does not impact the University's reserves. 	<ul style="list-style-type: none"> Medical Treatment Injury. Restricted or modification of duties for less than 1 month. Difficulty recruiting or replacing key departmental positions within a reasonable timeframe. Short term or isolated impact to staff morale.
Insignificant	Impact to the University can be dealt with by routine operations.	<ul style="list-style-type: none"> Academic quality and integrity issues faced as business as usual with close to no impact on overall quality, student satisfaction or load. Limited accreditation of small courses. 	<ul style="list-style-type: none"> Event(s) which do not have an impact on the University's research ranking or funding. 	<ul style="list-style-type: none"> Event(s) which do not impact the community or environment and can be resolved through business as usual activities. 	<ul style="list-style-type: none"> Issue resolved promptly by day to day management processes/little or no stakeholder interest. Unlikely to result in adverse regulatory response or action. 	<ul style="list-style-type: none"> An event the impact of which can easily be absorbed through normal activity. Loss of <5 days activity or work from such activity causing local interruption, service loss for minimum period. 	<ul style="list-style-type: none"> Whole of University Income Statement impact of <\$5m. Loss on investments which does not impact the University's financial performance. 	<ul style="list-style-type: none"> Injury report and/or first aid only. Lack of suitable candidates to fill operational roles.