

Activity / Task / Location: ExperimentFest – collection of water samples on campus and analysis in the laboratory

Reviewed / Approved By: Margaret Platell

Signature and Date:



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Risk Assessment Developed by: A/Prof Troy Gaston

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Risk Matrix

Likelihood

N.B. For more details regarding use of this matrix / definitions refer to final page of this document

Consequence

	Rare	Unlikely	Possible	Likely	Almost Certain
Severe <i>Eg. Potential Fatality or Injury or Illness with permanent disability</i>	MEDIUM	MEDIUM	HIGH	EXTREME	EXTREME
Major <i>Eg. Potential Lost Time Injury (but non-permanent disability)</i>	LOW	MEDIUM	MEDIUM	HIGH	EXTREME
Moderate <i>Eg. Potential Medical Treatment injury or illness (but no lost time)</i>	LOW	LOW	MEDIUM	MEDIUM	HIGH
Minor <i>Eg. Potential First Aid injury</i>	LOW	LOW	LOW	MEDIUM	MEDIUM
Minimal <i>Eg. Hazard or near miss requiring reporting and follow up action</i>	LOW	LOW	LOW	LOW	LOW

Actions required based on Risk Assessment

Extreme	An "extreme" risk requires immediate assessment and senior staff consideration is required; a detailed mitigation plan must be developed, and consideration should be given to ceasing the activity unless the risk can be reduced to a level of high or less; regular monitoring and reported on to the relevant management/steering committee; Target resolution should be within 1 month.
High	A "high" risk may also require immediate assessment and senior staff consideration; a mitigation plan must be developed; regular monitoring and reported on to the relevant management/steering committee. Target resolution (ideally reduction to medium or low level of risk) should be within 3 months.
Medium	A mitigation plan must be developed; existing controls need to be reviewed. Target resolution (ideally reduction to low level of risk) should be within 1 year.
Low	Risk is tolerable; manage by well established, routine processes/procedures and be mindful of changes to nature of risks.

Health and Safety Risk Assessment

Hazard Identification and initial Risk Rating			Control measures and Residual Risk Rating		Remaining Hazards	Actions required
What are the steps of the activity / items of equipment?	What are the potential hazards?	Risk Rating based on Risk Matrix	What control methods or measures will be used to reduce the likelihood and/or the consequence of an illness or injury from those hazards?	Residual Risk Rating based on Risk Matrix	What hazard remains?	What additional actions are required (by who and in what timeframe) to raise the level of control?
General Covid-19 information						
Higher risk student or staff member attending teaching session	Potential transmission of COVID-19 infection during session to vulnerable and immunocompromised students and staff.	Possible Severe[#] = HIGH	- Supplementary COVID 19 induction at commencement of session will ask Staff (Educators and Technical staff) and Students who identify as falling under the known higher risk groups (over 65, immuno-suppressed or with an underlying medical condition including Cardiovascular Disease, Chronic Respiratory Disease, Diabetes, Cancer, Hypertension) to notify technical officer and will be strongly advised not to attend face to face teaching activities at this time as it is recommended they continue to self-isolate and therefore do not participate in these practical sessions to reduce their risk of exposure. It has also been identified that Indigenous Australians may have an increased risk to COVID-19 and this advice also extends to this group until the data is available to make a more informed assessment. -Staff https://www.newcastle.edu.au/data/assets/pdf_file/0020/620813/COVID19-Questionnaire-staff.pdf and students https://www.newcastle.edu.au/data/assets/pdf_file/0019/620812/COVID19-Questionnaire-student.pdf will be directed to complete a COVID19 Health screening questionnaire submitted to the UON Health Service who will follow up with any persons who identify as higher risk to recommend reasonable adjustments during the COVID-19 Pandemic Period including deferring attendance at face to face sessions (students). - Students identifying as a higher risk individual will be provided with a concession.	Unlikely x Severe[#] = MEDIUM	Higher risk student does not wish to take concession and wants to attend session Higher risk staff member or Educator does not want to cease working in sessions. Higher risk person does not identify their risk status	If higher risk persons request for attendance is approved by the relevant Course Coordinator or staff Supervisor, additional PPE will be mandatory (P2/N95 respirator) unless the nominated PPE (face mask) already in use is assessed as being sufficient to manage the risk Note- if this PPE is not available and/or is not fit tested the student/staff member will not be approved access to the session

Students / staff travelling to/from sessions	Risk of infection during transit is increased if car-pooling or using public transport as these are enclosed spaces with the potential for close contact between people. (may have less than the identified 4m ² per person and may be closer than 1.5m to others)	Possible Severe[#] = HIGH	- If using public transport keep a safe physical distance apart from other travellers and transit staff of at least 1.5 metres apart. - Observe personal hygiene measures including hand washing/sanitising after touching shared surfaces etc. - Consider travel outside of peak times. - Observe any risk controls put in place by transport provider. Ref: SafeWork Australia factsheet- Public Transport: Minimising the risk of exposure to COVID-19 https://www.safeworkaustralia.gov.au/doc/public-transport-minimising-risk-exposure-covid-19 - Vehicle air-conditioning should be set to fresh air  - Recommended 2 persons per vehicle for carpooling as this allows 1.5 m distancing.	Unlikely x Severe[#] = Medium		
Staff and student attendance at campus or in the field	A staff member attending who has COVID-19 (confirmed or unconfirmed). This increases the risk of transmission of SARS-CoV-2 to other Staff and/or Educators and/or students present	Possible Severe[#] = HIGH	- Supplementary COVID 19 induction at commencement of session will advise staff and students they must not come to the campus or field trip if they have any symptoms, current imposed isolation restrictions (including being diagnosed with COVID-19 or having had close* contact with someone diagnosed with COVID-19). NOTE: Please make contact with your Course Co-ordinator to identify this reason for not attending the session as soon as possible and the discussion will be treated confidentially. -Should any staff or student be confirmed as having COVID-19 they are requested to immediately notify the University Health response Team (health.response@newcastle.edu.au) so UON can quickly take any necessary precautionary steps, including notifying others who may have been in contact with the person whilst they could have been infectious to immediately self-isolate. NOTE: provisions will be made to assist students with exemptions etc. so they are not adversely impacted should they be required to self-isolate. - If a staff member or student is identified as displaying any of the symptoms whilst in the workplace they will politely be asked to leave and go home and self-isolate as a precaution until the symptoms have gone and if they are unwell to seek medical advice.	Unlikely x Severe[#] = Medium		

Health and Safety Risk Assessment

Waiting outside room or teaching space	Transmission of SARS-CoV-2 whilst waiting outside the room Additional contact with high risk Oral Clinic students	Possible x Severe[#] = HIGH	- The 1.5m personal distancing requirement will be enforced both in and outside the room using floor stickers where appropriate for work at bench. Educators and staff will monitor the areas reminding students about the importance of following the new social distance guidelines. - Signs and posters have been located around the areas to remind staff and students of the risks of COVID-19 and the control measures that are to be observed. - At Ourimbah, interaction with adjacent oral clinic students will be minimised by students access into the building through the northern entry off courtyard only (the opposite entry to building to oral health clinic students and staff). Entry through the single door in SL1-121 will be monitored by technical staff. Entry into SL1-105 will be through segregated entry and exit doors. - All staff and students instructed and expected to observe cough/sneeze etiquette into the inner elbow, - All staff and students instructed and expected to if they blow their nose put the tissue straight into the bin and wash their hands. - All staff and students instructed and expected to observe basic personal infection controls (no touching the face, coughing/sneezing protocols, no pens in the mouth, no chewing nails etc.) - Hand washing/hand sanitiser after touching shared surfaces (door knobs etc.) or if you touch your face (this includes smoking and eating as well as scratching your nose, rubbing your mouth etc.) - Regular cleaning of any identified shared surfaces (door knobs, taps etc.) with suitable decontaminate by cleaning contractors. - There is an allowance of 2m² per person within rooms which ensures a minimum volume of air per person within the enclosed space that will allow reduction of the concentration of potential virus aerosol particles per square metre within the room (released by a sneeze or cough etc. from an infected person) to a concentration less likely to lead to infection	Unlikely x Severe[#] = MEDIUM	- Students that don't comply with instructions - Will receive any initial warning but if they continue to disregard this control measure they will be asked to leave and return home.
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			- Signage on room door identifying maximum capacity for the room (recommended max cap) and including provisions for social distancing (1.5m) - If someone has a coughing or sneezing fit whilst in the room or corridor they must cover their face with the crook of their arm and leave the building immediately			
Attending teaching and learning session including use of amenities	Transmission of COVID-19 in the room where a student, educator or staff member attends whilst asymptomatic and unknowingly infected Use of common amenities before, during or after session	Possible x severe[#] = HIGH	- Supplementary COVID 19 induction at commencement of session will advise staff and students to observe basic personal infection controls (no touching the face, coughing/sneezing etiquette into inner elbow, no pens in the mouth, no chewing nails, no finger-lick paper-flick etc.) - All staff and students instructed and expected to, if they blow their nose, put the tissue straight into the bin and wash their hands. - At Ourimbah, all staff and students instructed and expected to utilise the amenities in the adjacent Classroom South as toilets in the Science Building will be utilised solely for Oral Clinic students and staff to change attire when arriving from higher risk clinical placements or work locations. - All staff and students instructed and expected to observe hand hygiene practices with regular handwashing (or hand sanitising with gel if a hand basin is not available) including upon entry and prior to exiting and if anyone contaminates (potentially) their hands by touching their face or sneezing/coughing into their hands. - If someone has a coughing or sneezing fit whilst in the room they must cover their face with the crook of their arm and leave the room immediately - Vacating the room and shutting it up for a minimum of 40 minutes if someone has a coughing fit and then wiping down potentially affected work surfaces with a suitable decontaminate before recommencing work. Note- If the person is wearing a surgical mask for the activity or it is only a cough or sneeze into a crooked elbow, evacuation of the room may not be required (assess at the time on individual basis) as unlikely for	Unlikely x Severe[#] = MEDIUM	Exposure risk from cleaning products	- refer to SDS for cleaning product and prepare, use and store according to manufacturer instructions, including wearing PPE when required

			any aerosols to be released very far into the room and if they are it would be limited to within close proximity to the person (immediate 4m²). The person would leave the room if coughing and the work station left vacant with the surfaces wiped down after 40 minutes and/or at the end of the session as a precaution. - Regular cleaning of shared surfaces (door knobs, taps etc.) with a suitable decontaminate by cleaning contractors - The teaching working surfaces and any equipment (computer, keyboard, microscope) will be cleaned with 70% alcohol wipes or use spray bottles of a suitable disinfection agent (at the appropriate working dilution) and paper towel after each use by the staff member. - Use of appropriate impermeable barriers where alcohol wipes are not suitable or can't be used - The 1.5m personal distancing requirement will be enforced both in the lab and outside it. - Reduction of student numbers per session to meet the required room capacity limit and also with consideration to the 1.5 m personal distancing requirements and activity work flows. - Signage on room door identifying maximum capacity for the room (recommended max cap) - Any teaching notes provided to be laminated or in a plastic sleeve so they can be wiped over after use - Staff will lay out any materials at each work area prior to the session and remove equipment after the session to minimise movement to common and shared areas during the session			
Contamination of equipment or tools	Contamination of equipment or surfaces with COVID-19 from a student, educator or staff member who is	Possible x moderate = MEDIUM	- Staff will be responsible for additional cleaning of equipment with disinfectants, noting that these must be used according to the manufacturer's recommendations and concentration of the active ingredient, prior and between sessions.	Unlikely x Moderate = LOW	- Shortage of Hand sanitiser and disinfectants due to higher demand Exposure risk from cleaning products	- Contact IFS for assistance - Refer to SDS for cleaning product and prepare, use and store according to

Health and Safety Risk Assessment

	asymptomatic and unknowingly infected,		- After the completion of each session, all waste will be disposed of according to the normal procedures for that waste. - Regular decontamination of surfaces shared or touched by others is recommended during the standard cleaning process of the facilities, including door knobs, taps, touch screens for multi-users. - Where possible doors left open so door knobs do not need to be touched			manufacturer instructions, including wearing PPE when required
Attending teaching and learning sessions during pandemic	Mental Health Injury- The mental health of Staff and Students is an important consideration at this time as many feel fearful and alarmed which is normal and to be expected given the current environment and they may be concerned about attending the campus at this time.	Possible x moderate = MEDIUM	- Staff and students are encouraged to discuss any concerns with their Course Co-ordinator or Supervisor and to review this risk assessment and if additional control measures or a change to work activity is identified as necessary, these need to be incorporated into the risk assessment. - If a Student still identifies they are not comfortable to attend there are provisions in place to allow exemption from attending the class or option for online study wherever possible. - Staff will need to determine with their Supervisor what actions can be taken to address their concerns, noting the work activities in question associated with the teaching that cannot be undertaken from home or online	Unlikely x moderate = LOW		
General laboratory activities						
Entry & Exit / Normal doors with A4 size glass window at eye level	Cuts if glass is broken	Low	Care while opening and closing doors	Low	Cuts if glass is broken	N/A
Floors / Slippery when wet	Falling and associated physical injury	Low	Maintain dry floors/ Immediately wipe up spills / Wet floor sign / Students instructed to take care when walking around the lab.	Low	Slight risk of slipping	N/A
Floors / Loose items, which are tripping hazards	Tripping and associated physical injury	Low	Lab floor not used for general storage / All necessary items placed away from traffic areas / Student bags etc. stored under lab bench / Students instructed to take care when walking around the lab	Low	Slight risk of tripping	N/A
Floors / Lab stools, which are tripping hazards	Tripping and associated physical injury	Low	Lab stools to be stored under lab bench when not in use / Students instructed to take care when walking around the lab	Low	Slight risk of tripping	N/A

Health and Safety Risk Assessment

Lab stools / Proper use	Falling off stool and associated physical injury	Low	Students to properly use lab stools by having all four stool legs on the ground at all times.	Low	Falling/tipping over stool	N/A
Hard laboratory bench tops.	Physical injury if falling against bench top	Low	Students instructed to take care when walking around the lab / No running or pushing other students	Low	Falling against bench top	N/A
Gas Lines / Accidental opening	Illness from exposure to gas, burns if gas ignites	Low	Students instructed to keep hands off outlets unless using gas source / Report any suspected gas leaks / Gas isolation valve off unless in use	Low	None if gas isolation valve is turned off	N/A
Sharps bin	Cuts from materials in bin	Low	Use Australian Standard Sharps bin / Students instructed in the proper use of the Sharps bin	Low	Slight risk of cuts	N/A
Use of 70% ETOH spray cleaning bottle	Exposure to ethanol liquid and fumes- skin irritation/possible nausea	Low	Bottle properly labelled / Students instructed in the proper use for lab bench top cleaning / MSDS summary sheet given to students	Low	Possible skin contact with ethanol	N/A
Glass-front storage cabinets	Cuts if glass breaks	Low	Shatterproof glass / Not in main traffic areas.	Low	Slight risk of cuts	N/A
Fire	Burns/smoke inhalation/injury when evacuating room	Low	Building has smoke detectors / Lab has fire extinguishers / Appropriately marked fire exits/ Fire blanket / Safety shower / Fire warden present in building worn	Low	Injury when evacuating room	N/A
Laboratory testing of water samples						
Environment/ Skin contact with soil or water	Soil or water-borne disease	Low	PPE worn (gloves/lab coats/safety glasses). Students instructed to minimise contact and wash hands as soon as practicably possible after practical.	Low	Slight risk of contact with soil or water	N/A
Exposure to potentially hazardous chemical reagents used in "powder pillows" for water test kits	Skin and/or eye irritation, nausea if ingested	Medium	Students instructed in the proper use / SDS summary in Lab / PPE worn (gloves/lab coats/safety glasses)	Low	Possible spill risk	N/A
Field-based sampling on Campus						
Environment/ hot, cold or wet	Sunburn, heat exhaustion, hypothermia.	Low	Students instructed to wear appropriate clothing- hat & sunglasses in hot weather, wet weather gear when raining, bring bottled drinking water, use the sunscreen provided	Low	Slight risk of sunburn remaining	N/A
Environment/ Tripping and slipping hazards	Falling and associated physical injury	Low	Students warned of any areas to avoid because of known hazards. Students instructed to take care when walking around in the field, wear closed, non-slip shoes (e.g. joggers or boots) at all times and report all injuries to the demonstrator.	Low	Slight risk of tripping/slipping	N/A

Health and Safety Risk Assessment

Environment/ Sharp objects, thorns, etc.	Scratches and cuts	Low	Students instructed to wear long sleeved shirts and trousers and closed shoes. Students warned of any areas to avoid because of known hazards. First aid kit available.	Low	Slight risk of minor injury	N/A
Equipment/ Tripping hazard	Tripping and associated physical injury	Low	Students instructed not to leave equipment in thoroughfares or paths	Low	Slight risk of tripping	N/A
Behaviour/ personal injury or injury to others	Physical injury	Low	Students are instructed not to "clown around" and put their own or their classmates safety at risk at any time. Students instructed to follow the code of conduct issued by the School of Environmental & Life Sciences.	Low	Slight risk of physical injury	N/A
Environment/ Skin contact with soil or water	Soil or water-borne disease	Low	Students instructed to minimise contact and wash hands as soon as practicably possible after practical.	Low	Slight risk of contact with soil or water	N/A
Environment/ falling into waterway/waders filling with water	Drowning, hypothermia	Medium	Students instructed to use extreme caution near pond and not to collect samples alone.	Low	Slight risk of falling in water remains	N/A
Environment/ Insect bites/stings	Skin irritation, anaphylactic shock, insect-borne disease	Medium	Students instructed to wear long sleeved shirts and trousers and use insect repellent. Those with known allergy (e.g. plants, insects) to carry appropriate medication and advise lecturer. First aid kit available.	Medium (for those allergic to bites/stings)	Slight risk of insect bite	N/A
Environment/ Snake or spider bite	Skin irritation, death	Medium	Students instructed to wear long sleeved shirts and trousers and closed shoes. Students instructed not to handle venomous and/or poisonous animals. Students instructed to report all bites to the demonstrator. First aid kit available.	Medium (for those allergic to bites/stings)	Slight risk of such bites remain	N/A

Summary of Requirements based on Risk Assessment		Review Period / Date
Personal Protective Equipment	Safety Glasses, laboratory coat, protective footwear, disposable gloves (as required), waders, insect repellent.	Yearly
Other Equipment and Equipment Protection	Assorted glassware, chemicals (solids and solutions); microscope; spectrophotometer; water quality metres, sampling nets.	Yearly
Training Requirements	General safety induction on correct laboratory procedure is provided for both the environmental science and chemistry laboratories at the start of the semester. Potential hazards in individual laboratory exercises are identified at the start of each session. Students are not permitted to work in the lab without proper induction and sign off of relevant safety documents.	Yearly

Procedures, SOPs etc		
Relevant Legislation etc.	WHS Act 2011 (NSW), AS/NZS 2243.1.2005 Safety in laboratories, Part 1: Planning & Operational Aspects AS/NZS 2243.2.2005 Safety in laboratories, Part 2: Chemical Aspects	Yearly

Questions to ask in order to determine the hazards relating to the task:

A Could people be injured or made sick by things such as: - Noise - Light - Radiation - Toxicity - Infection - High or low temperatures - Electricity - Moving or falling things (or people) - Flammable or explosive materials - Things under tension or pressure (compressed gas or liquid; springs) - Any other energy sources or stresses - Biohazardous material - Laser	D What could go wrong? - What if equipment is misused? - What might people do that they shouldn't - How could someone be killed? - How could people be injured? - What may make people ill? - Are there any special emergency procedures required? E Are procedures or organisational systems missing or not being followed? - Standard Operating Procedures? - Risk Assessments? - Induction or training? - Management of change? - Safety Inspections? - Hazard reporting? - Contractor Management?
B Can workplace practices cause injury or sickness? - Are there heavy or awkward lifting jobs? - Can people work in a comfortable posture? - If the work is repetitive, can people take breaks? - Are people properly trained? - Do people follow correct work practices? - Are there adequate facilities for the work being performed? - Are universal safety precautions for biohazards followed? - Is there poor housekeeping? Look out for clutter - Torn or slippery flooring - Sharp objects sticking out - Obstacles	F What kinds of injuries could possibly occur? - Broken bones - Eye damage - Hearing problems - Strains or sprains - Cuts or abrasions - Bruises - Burns - Lung problems including inhalation injury/ infection - Skin contact - Poisoning - Needle-stick injury - Psychological illness or injury
C Imagine that a child was to enter your work area? What would you warn them to be extra careful of?	

- What would do to reduce the harm to them?

How to Assess Risk

Step 1 – Consider the Consequences What are the potential consequences of an incident occurring? Consider what <u>could reasonably</u> happen as well as what may actually happen. Look at the descriptions and choose the most suitable Consequence. ↓		Step 2 – Consider the Likelihood What is the likelihood of the consequence identified in step 1 happening? Consider this with the current controls in place. Look at the descriptions and choose the most suitable Likelihood. ↓		Step 3 – Calculate the Risk Rating A. Take Step 1 rating and select the correct column. B. Take Step 2 Rating and select the correct line. C. The calculated risk rating is where the two ratings cross						
Consequence		Likelihood		CONSEQUENCE	LIKELIHOOD					
					Rare	Unlikely	Possibly	Likely	Almost Certain	
Serious	Potential Fatality or Injury or Illness with permanent disability	Almost Certain	The event could be expected to occur in most circumstances: "This is a common problem here".		Serious	MEDIUM	MEDIUM	HIGH	EXTREME	EXTREME
Major	Potential Lost Time Injury requiring time off work (but non-permanent disability)	Likely	The event has a reasonable chance of occurring in usual conditions: "It has happened here before".		Major	LOW	MEDIUM	MEDIUM	HIGH	EXTREME
Moderate	Potential medical treatment Injury or Illness but no lost time	Possible	The event might occur occasionally, has occurred sometime: "Has infrequently happened here before".		Moderate	LOW	LOW	MEDIUM	MEDIUM	HIGH
Minor	Potential First Aid Injury	Unlikely	The event has a small chance of occurring. "It has not happened here but has occurred elsewhere".		Minor	LOW	LOW	LOW	MEDIUM	MEDIUM
Minimal	No injury but hazard exists or near miss occurred requiring reporting and follow up action	Rare	Very unlikely to occur. "It would be extremely rare for it to occur here".		Minimal	LOW	LOW	LOW	LOW	LOW

Control Type	Example
Eliminate	Removing the hazard, eg taking a hazardous piece of equipment out of service.
Substitute	Replacing a hazardous substance or process with a less hazardous one, eg substituting a hazardous substance with a non-hazardous substance.
Engineering	Redesign a process or piece of equipment to make it less hazardous, Isolating the hazard from the person at risk, eg using a guard or barrier, or containing the hazard in an enclosure.
Administrative	Adopting safe work practices or providing appropriate training, instruction or information.



Personal Protective Equipment (PPE)

The use of personal protective equipment could include using gloves, glasses, earmuffs, aprons, safety footwear, dust masks. **NOTE: This is a last resort control and should be used in conjunction with higher level controls.**

Controlling the Risk: Risk control is a method of managing the risk with the primary emphasis on controlling the hazards at source. For a risk that is assessed as “extreme” or “high”, steps should be taken immediately to minimize risk of injury. The method of ensuring that risks are controlled effectively is by using the “hierarchy of controls”. The Hierarchy of Controls are: