UTS HEALTH, SAFETY & WELLBEING

GENERAL RISK ASSESSMENT

Activity name	TurtleBot Operation	**Faculty**	FEIT	**School / Centre / Department**	MME
Activity description	Control 2 TurtleBot's in a simulated Art Studio environment to delivery simulated drinks to customers at tables				
Date of assessment	26/2/2025	**Version No.**	1	**Next review date**	
Form completed by/Assessor:	Andrew, Issy, Tom, Hallie	Staff / Student / Other	**Supervisor**	Tony Le	
Location(s) of activity, e.g. CB01.01	CB11.10.403	**Lab Manager/Technical Services (or equivalent) of activity location (if relevant):**	Felipe Gutierrez	**Planned activity date(s):**	26/2/2025 – 14/6/2025
Persons at risk	Workers / Students / Visitors / Contractors / Public / Other	**Persons consulted** (consider anyone with access to or affected by the activity)	Tony Le		
List any Reference legislation, standards, codes of practice, manufacturer's guidance etc used to help identify hazards and control measures relevant to this activity *Refer to the H&S Policy, Codes of Practice, Australian Standards*					

Instructions: Use the guidance notes at the end of this document to help complete this table

TASK List and describe hazardous task/activity/process/step/equipment	**ASSOCIATED HAZARD(S)**	**INHERENT HARM** Harm that could occur from these hazards if controls fail or are not in place.	**EXISTING CONTROL MEASURES** Control measures currently in place to minimise risk	**RISK LEVEL** (H,M,L)	**PROPOSED CONTROL MEASURES** Additional control measures needed to reduce risk further	**TARGET DATE** To implement proposed controls	**RESIDUAL RISK LEVEL** (H,M,L)
Electrical cables mishandled	Risk of electric shock, Fire from short circuits, Trips over untidy cables	Burns, electrocution Sprained ankles	All electrical equipment is tested and tagged by UTS Staff. SOP's require checking of all equipment before use. E-Stops available for all robots	L	Tidy around Robot area and have cable management as a high priority.	4/3/25	L

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Leaving the robot unattended	Collision with somebody, Trips over robot, Uncontrolled movement	Pinches, trips over robot, musculoskeletal injury	Lab supervisors are required for robot use at all times. SOP's require someone to be in control of the robot at all times. E-Stops available for all robots	L	Inform all individuals around the robot where the E-Stop before using the robot.	4/3/25	L
Robot moves incorrectly	Robot hitting someone, Trips over robot	Pinches, trips over robot, musculoskeletal injury	Exclusion area around the robot during movement	L	Announce when the robot will be moving to everyone in the immediate area of the robot	4/3/25	L
Manual handling	Incorrect manual handling Not trained in heavy lifting	Back related injuries, musculoskeletal injury	Safe handling training required for entry into lab (lab safety induction through Rapid Global)	L	Always have multiple people for heavy lifting as trained in lab inductions	4/3/25	L
Untidy Workspace	Slips and trips	musculoskeletal injury	SOP's require a clean area before use	L	Keep all personal items and/or bags in a designated area away from activities. Practice CAYG.	4/3/25	L
Operating robot when tired or distracted	Robot hitting someone, Trips over robot. Incorrect electrical setup	Pinches, trips over robot, musculoskeletal injury Burns, electrocution	Lab supervisors are required for all robot usage. E-Stops available for all robots	L	Ensure to take regular breaks when operating robot for long periods, do not operate robot alone.	4/3/25	L

Emergency preparation and response					
EMERGENCY List and describe foreseeable potential emergency situations	**INHERENT HARM** Harm that could occur from these hazards if controls fail or are not in place.	**EXISTING CONTROL MEASURES** Control measures currently in place to minimise risk	**PROPOSED CONTROL MEASURES** Additional control measures needed to reduce risk further	**TARGET DATE** To implement proposed controls	**RESIDUAL RISK LEVEL** (H,M,L)
Electrical Fire	Bruns	Fuses are required for all electronics. All UTS electrical cabling and equipment are tagged and tested for safe use, all Staff and Students are required to check tags for compliance. All students have Rapid Global Inductions which outline the procedure for fires	Ensure all students are inducted correctly in the laboratory Ensure all equipment tags are in date	4/3/25	L
Electric Shock	Electrocution	Fuses are required for all electronics. All UTS electrical cabling and equipment are tagged and tested for safe use, all Staff and Students are required to check tags for compliance. All students have Rapid Global Inductions which outline the procedure for electric shocks	Ensure all students are inducted correctly in the laboratory Ensure all equipment tags are in date Confirm where relative E-stops are and that they are functional	4/3/25	L
Battery Explosion	Chemical Burns	Fuses are required for all electronics. All UTS electrical cabling and equipment are tagged and tested for safe use, all Staff and Students are required to check tags for compliance. All students have Rapid Global Inductions which outline the procedure for emergency (call UTS Security)	Ensure all students are inducted correctly in the laboratory Ensure all equipment tags are in date Ensure All students have UTS security number is saved in their mobile device	4/3/25	

Sign-off and Approval						
Form/Assessor Author:		Reasonably practicable control measures identified and implemented	Signature		Date	
Responsible supervisor's* Name:		Satisfied that control measures will reduce risk to an acceptable level	Signature		Date	

*Responsible supervisor is the person with control/authority over the activity

Acknowledgement of Understanding

Persons performing the activity/tasks sign that they have read and understood the risk assessment.
Note: For activities which are low risk or include a large group of people (e.g. open days, BBQ's, student classes etc), only the persons undertaking the key activities should sign below. For all others involved, the information can be covered by other methods (for example a safety briefing, induction, and/or safety information sheet).

Student / Staff name	ID	Date	Signature	Remarks

Andrew Goode	13852898	4/3/25	Andrew Goode	
Thomas Dodgson	13887791	4/3/25	Thomas Dodgson	
Issy Pitt	14040354	04/03/2005	*Issypitt*	
Hallie Robins	14253583	04.03.2025	Hallie Robins	

Guidance notes for completing the risk assessment

TASK

Briefly describe hazardous tasks involved in this work activity – For example, Operating, Handling, Using … (Include names) of hazardous equipment, substances or materials used, and any quantities and concentrations of substance(s) or reaction products.

ASSOCIATED HAZARDS

Manual Handling – moving objects, repetitive movements, lifting awkwardly, lifting heavy objects
Work Environment – extremes in temperature, work at height, explosive atmosphere, slippery surfaces/trip hazards, work load, work alone, work after hours, confined spaces, infrastructure
People – potentially violent or volatile clients/interviewees, harassment, bullying, victimisation, poor culture
Environmental – emissions to atmosphere, discharge to soil and water bodies (including stormwater run-off), nuisance noise & odour, poor ventilation/air quality
Plant & Equipment – noise, vibration, dust, moving parts (crushing, friction, stab, cut, shear), pressure vessels, lifts/hoists/cranes, sharps, maintenance, design/assembly, AEV/Drone, hot work
Electrical – plug-in equipment used in 'hostile' work environment, exposed conductors, high voltage equipment
Chemical – hazardous substances, dangerous goods, fumes, dust, compressed gas, hazardous waste
Biological – exposure to bodily fluids/infectious materials, pathogenic microorganisms (bacteria, viruses, parasites, fungi), security sensitive biological agents, sharps/needles, animal bites and scratches, allergies to animal bedding, dander and fluids
GMOs – dealings with genetically modified organisms
Cytotoxins – carcinogens, mutagens or teratogens
Radiation (ionizing) – Ionizing radiation source such as radioactive substance or radionuclide, or irradiating apparatus
Radiation (non-ionizing) – including lasers, microwaves or UV light

INHERENT HARM

Provide details of the harm that could be caused to people or the environment if something goes wrong.
For example: inhalation of fumes, laceration, injury to back, infection, burns to skin or eyes.
Think about what could happen if controls fail or are not in place.

EXISTING CONTROL MEASURES

This is existing measures in place to reduce risk to an acceptable level. Apply the "Hierarchy of Controls", listed below, when deciding the best control measure to apply. Control types closer to the top of the list are preferable.

1. ELIMINATE THE HAZARD. For example, work from the ground with a long-handled tool instead of a ladder thus eliminating work at height.
2. SUBSITUTE THE HAZARD. For example, use a less dangerous piece of equipment or chemical.
3. ISOLATE THE HAZARD FROM PEOPLE. For example, move a noisy equipment into a room that is not accessed when it is in operation.
4. USE ENGINEERING CONTROLS. For example, use a fume cupboard for chemicals, use a guard for rotating parts.
5. USE ADMINISTRATIVE CONTROLS. For example, change work practices, provide training, use signage, develop a safe work method statement.
6. USE PERSONAL PROTECTIVE EQUIPMENT (PPE). For example, respirator, hearing protection, gloves. Training and information is required for the use of PPE.

PROPOSED CONTROL MEASURES

List control measures not currently in place but you plan to put in place before the activity starts.

RISK LEVEL (High / Medium / Low)

The level of risk can be determined by combining consequence and likelihood using the risk matrix below. Residual risk is the level with all control measures in place (existing and proposed). It should be reduced to a level acceptable by management.

CONSEQUENCE OF HARM - This is how bad it will be if something does go wrong e.g. the number of people that could be harmed, the severity of injury.

LIKELIHOOD OF HARM - Chance of harm occurring is affected by the duration of the activity and its frequency; the number of people doing the activity and the level of exposure to the hazard.

For more information on risk determination refer to the UTS Risk Management Procedure

			Health & Safety Risk				
Likelihood	The risk is expected to occur in most circumstances	Almost certain	Moderate	High	High	Critical	Critical
	The risk will probably occur in most circumstances	Likely	Moderate	Moderate	High	High	Critical
	The risk should occur at some time	Possible	Low	Moderate	Moderate	High	High
	The risk could occur at some time	Unlikely	Low	Low	Moderate	Moderate	High
	The risk may only occur in exceptional circumstances	Rare	Low	Low	Low	Moderate	Moderate
			Insignificant	Minor	Moderate	Major	Catastrophic
			Non-injury incident or first aid treatable injury only	Illness or injury that requires medical attention leading to 0 to 10 days off work but does not permanently impact health or wellbeing of an individual	Injury or ill health requiring medical attention leading to over 10 and up to 20 days off work but does not permanently impact health or wellbeing of an individual	Injury or ill health requiring hospital admission leading to over 20 days off work but does not permanently impact health or wellbeing of an individual	Single or multiple deaths or a serious injury that permanently impacts health and wellbeing of an individual
			Consequence				