

UTS HEALTH, SAFETY & Wellbeing

General Risk Assessment

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| **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*](http://www.gsu.uts.edu.au/policies/health-safety-policy.html)*,* [*Codes of Practice*](https://www.safeworkaustralia.gov.au/resources_publications/model-codes-of-practice)*,* [*Australian Standards*](https://sso.lib.uts.edu.au/cas/login?service=https%3A%2F%2Fwww.lib.uts.edu.au%2Fgoto%3Fqurl%3Dhttps%253a%252f%252fwww.saiglobal.com%252fonline%252fautologin.asp%26_casCheck%3Dtrue) | | |  | | |

*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) |
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| 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 |
| 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 |
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| **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 |  |

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| **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

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| **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 |  |
| IIssy Pitt | 14040354 | 04/03/2005 | *Issypitt* |  |
| Hallie Robins | 14253583 | 04.03.2025 | Hallie Robins |  |
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**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*](https://staff.uts.edu.au/topichub/Documents/Risk/Risk%20Management%20Procedures.pdf)

