

**GENERAL RISK ASSESSMENT TEMPLATE**

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| **Work area / operation** | CB11.10.403 | | **Assessor’s name** | Tamsyn Crangle & Jet Webb | | | |
| **Other persons consulted** |  | | | | **Date of safety assessment** | | 20/10/2023 |
| Subject Coordinator’s Name | Gavin Paul | Lab Supervisor’s Name | | | | Michael Lee | |

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| **ACTIVITY**  - Describe hazardous activities related to the work area or operation. | **ASSOCIATED HAZARDS** | **INHERENT RISK**  - Harm that could occur from these hazards if controls fail or are not in place. | **EXISTING CONTROL MEASURES** | **PROPOSED CONTROL MEASURES**  - Proposed action to minimise risk to an acceptable level. | **TARGET DATE**  - To implement proposed controls | **RESIDUAL RISK LEVEL** (H,M,L) |
| Lemon juice leaving the confinement area. | Hazardous substances  Corrosive substance | * Eye injury * Damage to robot electronics * Corrosive to robot surface |  | * Screen to block lemon juice * Plastic sleeve covering robot arm * Securely fasten the lemon juicer, check fastening after each use * Wear safety glasses * Replacing the lemon with a 2 part 3D printed version, held together with 2 magnets | 25/10/2023 | L |
| Slip Hazzard | Hazardous substances  Corrosive substance | * Injury resulting from fall (slipping on lemon juice) |  | * Securely fasten the lemon juicer, check fastening after each use * Clean up spills immediately * Replacing the lemon with a 3D printed version | 25/10/2023 | L |
| Leaving the robot arm unattended | Moving Parts  Sharps  Hazardous Substances  Corrosive substance | * Cut injuries from exposure to sharps. * Eye injury resulting from lemon juice. | Lab supervisor | * Remove knife when leaving robot unattended. * Remove lemon juice when leaving robot unattended. * Knife will be replaced with a white plastic ‘party’ knife | 25/10/2023 | L |
| Moving knife | Moving sharp object | * Deep cuts * Loss of limbs | Area of Isolation around the robot. | * Have knife sheathed whilst not in use * Keep knife low to the table and have slow movements, stay within defined operating area. * Knife will be replaced with a white plastic ‘party’ knife | 25/10/2023 | L |
| Robot arm moves incorrectly | Moving Parts | * Damage to robot motors and arm. | Maintain a clean working area | * Build object avoidance into the code (for known objects). | 25/10/2023 | L |
| Having loose hair/ clothing in robot operational area | Moving Parts | * Loss of hair * Damage to scalp * Blunt trauma | Keep hair tied back and wear appropriate clothing. | * Plastic sleeve covering robot arm | 25/10/2023 | L |
| Operating robot when tired or distracted | Moving Parts  Sharps  Hazardous Substances  Corrosive substance | * Cut injuries from exposure to sharps. * Eye injury resulting from lemon juice. * Damage to robot | Mandatory lab and robot training. | * Don’t operate robot alone, work with teammate. * Take regular breaks. * Remove distractions from operating area. | 25/10/2023 | L |

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| **Approval of assessment** | I am satisfied that the residual risk with existing controls is acceptable X Yes ☐No  OR  I am satisfied that that the proposed controls will reduce risk to an acceptable level. X Yes ☐No | Signature | **Jet Webb:**  **Tamsyn Crangle:** | Date | 20/10/2023 |

**Guidance notes for documenting General Risk Assessments**

**ACTIVITY**

**Briefly describe this hazardous work activity -** E.g. 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**

**Plant & Equipment** – noise, vibration, moving parts (crushing, friction, stab, cut, shear), pressure vessels, lifts/hoists/cranes, sharps

**Manual Handling** – repetitive movements, lifting awkwardly, lifting heavy objects

**Work Environment** – moving objects, extremes in temperature, isolation, work at height, allergies to animal bedding, dander and fluids, risk of fire/explosion, slippery surfaces/trip hazards

**People** – potentially violent or volatile clients/interviewees

**Communicable Diseases** – exposure to bodily fluids/infectious materials, animal bites and scratches,

**Environmental** – emissions to atmosphere, discharge to soil and water bodies (including stormwater run-off), nuisance noise & odour, poor ventilation/air quality

**Radiation (non-ionizing)** – including lasers, microwaves or UV light

**Electrical** – plug-in equipment used in ‘hostile’ work environment, exposed conductors, high voltage equipment

**Pathogens** – dealings with pathogenic microorganisms such as bacteria, parasites, fungi or viruses

**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

**Chemical** – hazardous substances, dangerous goods, fumes, dust, compressed gas, hazardous waste

**INHERENT RISK**

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.

**CONTROL MEASURES**

Note the existing and proposed actions 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 the top of the list are preferable.

1. Eliminate the hazard. For example: use a different less dangerous piece of equipment, fix faulty machinery, use safer materials or chemicals

2. Isolate the hazard from the people. Separate people from the danger. For example: use shielding, use lifting equipment or trolleys, remove dust or fumes with exhaust system, lock-out machinery.

3. Change the way the job is done. For example: change work practices, provide training, information and signs, develop work procedures.

4. Use personal protective equipment (PPE), noting specific PPE is required for each job. For example: respirator, hearing protection, gloves. Training and information is required for the use of PPE.

**RESIDUAL RISK LEVEL (H, M, L)**

Estimate risk taking into account the way the activity is run and control measures put in place. The level of risk can be determined by combining consequence and likelihood using the risk matrix from below. Residual risk 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.

