

UTS SAFE WORK METHOD STATEMENT (SWMS)

1. FACULTY/SUBJECT			
Faculty/Subject title		FEIT/ Robotics 41013	
Subject supervisor/coordinator		Gavin Paul	
SWMS prepared by		Eirene Magsino, Byron Hui	

2. WORK ACTIVITY DESCRIPTION	
<p>Describe the work activity E.g. Operating, Handling, Using..</p> <p>Include names of hazardous equipment, substances or materials used, and any quantities and concentrations of substance(s) or reaction products.</p>	<ul style="list-style-type: none"> - Manual handling of equipment during assembly process - Movement and operation of a robot arm within a workspace - Objects with hot liquids frequently transported between work areas (e.g. coffee machine, drop off point) - Electrical components and wiring, which will need to be secured and liquid safe

3. HAZARDS: Choose those hazard types that will need to have control measures in Section 4			
<p>Work Environment</p> <ul style="list-style-type: none"> • Working in Remote Locations • Working Outdoors/fieldwork • Clinical/Industrial setting • Poor ventilation/Air quality • Temperature extremes • Working at Height • Slip/Trip/Fall hazards 	<p>Plant</p> <ul style="list-style-type: none"> • Noise • Vibration • Working with compressed air • Lifts Hoists or Cranes • Moving parts (Crushing, friction, cut, stab, shear hazards) • Pressure Vessels or Boilers 	<p>Chemical</p> <ul style="list-style-type: none"> • Hazardous Chemicals use • Skin/eye irritant • Sensitiser • Mutagen • Carcinogen • Toxic to reproduction • Aquatic toxicity • Toxic • Corrosive • Dangerous when wet 	<p>Ergonomic/Manual Handling</p> <ul style="list-style-type: none"> • Repetitive or awkward movements • Lifting heavy objects • Over reaching • Working above shoulder or below knee height • Poor workstation set up
<p>Electrical</p> <ul style="list-style-type: none"> • Plug in equipment • High voltage • Exposed wiring • Exposed conductors 	<p>Radiation</p> <ul style="list-style-type: none"> • Ionising Radiation • Non-ionising radiation (Lasers, Microwaves, Ultraviolet light) 	<p>Biological</p> <ul style="list-style-type: none"> • Sharps/Needles • Cytotoxins • Pathogens/infectious materials • Infectious materials • Communicable diseases • Animal/insects • Work with fungi/bact/viruses 	<p>Psychosocial</p> <ul style="list-style-type: none"> • Aggressive or violent clients/students • Working in isolation • Working with timeframes • Staffing issues

4. CONTROLS MEASURES: Choose those that apply for hazards identified		
<p>Eliminate/Isolate/Substitute / Engineering Controls</p> <ul style="list-style-type: none"> • Remove hazard • Restrict access • Redesign equipment • Guarding / Barriers / Fume Cupboard / exhaust • Biosafety cabinet • Use safer materials/substances • Ventilation • Regular maintenance of equipment • Redesign of workspace / workflow 	<p>Admin specific: Licenses/permits Work Methods</p> <ul style="list-style-type: none"> • Training Information or Instruction • Licensing or certification of operators • Test and tag electrical equipment • Restricted access • Regular breaks • Task rotation • Work in pairs • Document Chemical risk assessment • Ladder / Sling register 	<p>Emergency Response Systems</p> <ul style="list-style-type: none"> • First aid kit • Chemical spill kit • Safety shower • Eye wash station • Emergency Stop button • Remote Communication Mechanism
<p>Other controls not listed</p>		

5. PPE REQUIRED (Tick those that apply)



EYE
PROTECTION

☐


HEARING
PROTECTION

☐


CLOSED-IN
FOOTWEAR
MUST BE WORN

☒


HAND
PROTECTION

☐


FACE
SHIELD

☐


PROTECTIVE
CLOTHING

☐


RESPIRATORY
PROTECTION

☐


LONG HAIR MUST
BE CONTAINED

☒


HEAD
PROTECTION

☐

6. EMERGENCY EQUIPMENT



EMERGENCY
SHOWER

☐


EMERGENCY
SPILL
KIT
INSIDE

☐


EMERGENCY
EYEWASH

☐

7. WORK ACTIVITY STEPS

BEFORE YOU START:

- SAFE AND CORRECT SET-UP OF WORKSPACE, INCLUDING A FIRE EXTINGUISHER, EMERGENCY STOP BUTTON, BEACON, COLLISION DETECTION SENSORS
- INSTALLATION OF WARNING SIGNS AND INDICATOR BOARDS
- SECURE ALL LOOSE CABLING AND WIRING
- ENSURE ALL ELECTRICAL COMPONENTS HAVE A LIQUID SAFE ENCLOSURE

STEPS IN WORK ACTIVITY:

- ROBOT ARM MOVEMENTS THAT PICK AND PLACE A COFFEE CUP (EITHER FULL OF LIQUID OR EMPTY) :
 - PICK UP EMPTY COFFEE CUP FROM COFFEE CUP STACK OR FROM CUSTOMER
 - DEPOSIT EMPTY COFFEE CUP UNDER THE COFFEE MACHINE
 - TRANSPORT FULL COFFEE CUP TO THE CUSTOMERS

EMERGENCY PROCEDURES:

- PRESS THE EMERGENCY STOP BUTTON UPON COLLISIONS OR DETECTION OF ANY ISSUES HARMFUL TO THE ROBOT OR CUSTOMERS
- USE FIRE EXTINGUISHER UPON FIRE EMERGENCY
- COLLISION DETECTION SENSORS WILL HALT ALL OPERATIONS AND ALERT MAINTENANCE

TRAINING REQUIRED:

- ROBOT OPERATION
- SAFETY INDUCTION FOR WORKERS
- MANUAL HANDLING OF EQUIPMENT

8. SIGN OFF

PREPARED BY:

NAME: EIRENE MAGSINO, BYRON HUL

SUPERVISOR

NAME: _____

DATE: 17/05/20 _____

REVIEW DATE: _____