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| UTS SAFE WORK METHOD statement (SWMS) |

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| 1. **FACULTY/SUBJECT** | |
| Faculty/Subject title | 41013 Industrial Robotics |
| Subject supervisor/coordinator | Gavin Paul |
| SWMS prepared by | Arthur Baron von Wilcke (24858058)  Britney Malone (13868233)  Sebastiano Guarna (13899947) |

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| 1. **WORK ACTIVITY DESCRIPTION** | | | | | |
| Describe the 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. | The SafeCo team is embarking on an innovative project to expand their product range with the RoboBAR, a versatile robotic bar system aimed at hospitality, luxury homes, and events. It involves two key robotic arms: the ABB GoFa 5 for drink preparation and the DoBot Magician (mounted on a linear rail) for serving. The project begins with precise installation of these robots within a safe workspace. Programming will follow, fine-tuning the ABB GoFa 5's drink-making abilities and the DoBot Magician’s efficient drink delivery.  Safety is paramount, with comprehensive safety features and rigorous testing to mitigate risks. User-friendly interfaces will be designed for easy operation via touchscreens or mobile apps. Operator training ensures safe use, and continuous optimization efforts will enhance performance and drink preparation speed.  The project also includes documentation and compliance with relevant regulations to meet safety and quality standards. With a focus on safety and innovation, the RoboBAR project promises to revolutionize the automated beverage service industry. | | | | |
| 1. HAZARDS: Choose those hazard types that will need to have control measures in Section 4 | | | | | |
| **Work Environment**   * Industrial setting | **Plant**   * Moving parts (Crushing,friction, cut, stab, shear hazards) | | **Chemical**   * Hazardous Chemicals use * Skin/eye irritant * Sensitiser * Mutagen * Carcinogen * Toxic to reproduction * Aquatic toxicity * Toxic * Corrosive * Dangerous when wet | | **Ergonomic/Manual Handling**   * Repetitive or awkward movements (possibly but not likely) |
| **Electrical**   * Plug in equipment * High voltage | **Radiation**   * Ionising Radiation * Non-ionising radiation (Lasers, Microwaves, Ultraviolet light) | | **Biological**   * Sharps/Needles * Cytotoxins * Pathogens/infectious materials * Infectious materials * Communicable diseases * Animal/insects * Work with fungi/bact/viruses | | **Psychosocial**   * Aggressive or violent clients/students * Working in isolation * Working with timeframes * Staffing issues |
| 1. **CONTROLS MEASURES: Choose those that apply for hazards identified** | | | | | |
| **Eliminate/Isolate/Substitute / Engineering Controls**   * Remove hazard * Restricted access to Labs * Redesign equipment * Guarding / Barriers * Regular maintenance of equipment * Redesign of workspace/workflow | | **Admin specific: Licenses/permits Work Methods**   * Training Information or Instruction * Licensing/certification of operators * Test and tag electrical equipment * Restricted access * Work in pairs (or groups) | | **Emergency Response Systems**   * First aid kit * Emergency Stop button * UTS internal phone | |
| **Other controls not listed**  Not Applicable: the previously selected controls will apply to all possible hazards in the given work activity situation. | | | | | |
| 1. **PPE REQUIRED (Tick those that apply)** | | | | | |
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| http://www.orr.uts.edu.au/images/pictograms/protection/respiratory.pnghttp://www.orr.uts.edu.au/images/pictograms/protection/head.pnghttp://www.orr.uts.edu.au/images/pictograms/protection/hair.png | | | | | |
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| 1. **EMERGENCY EQUIPMENT** | | | | | |
| http://www.orr.uts.edu.au/images/pictograms/equipment/eyewash.pnghttp://www.orr.uts.edu.au/images/pictograms/equipment/spill.pnghttp://www.orr.uts.edu.au/images/pictograms/equipment/shower.png | | | | | |
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| 1. **work activity steps** |
| **before you start:**   * Measure and review the specifications of the proposed work environment and/or equipment * Program the DoBot Magician to work on the linear rail and the ABB GoFa 5 within a simulated work environment (based on physical robots) * Become familiar with the simulation software (MATLAB) and control interfaces of the system/s * Ensure availability of safety equipment and knowledge of emergency procedures   **steps in work activity:**   1. Perform Simulated testing of the Robotic platform    1. Effective installation of the DoBot Magician on the Linear Rail    2. Effective installation of the ABB GoFa 5 robot 2. ‘Installation’ of the work environment – erecting of safety fencing/ barriers/ guarding and safety PPE 3. Mount the DoBot Magician on the Linear Rail 4. Place beverages in the pre-selected positionings 5. Adjust Simulated programming to match the specifications of the physical set-up in relation to the DoBot and GoFa 6. Remain out of the work zone while the programs/robots are operational to remove any chance of injury   **emergency procedures:**   * Press emergency button * Apply first aid (if required) * Notify campus security or dial 6 using the UTS internal phone   **training required:**   * Induction/s:   + Lab induction   + Induction for Robot/s use * Proper handling and installation of the robotic system/s (DoBot Magician/linear rail and ABB GoFa 5) * Proficiency in programming the robots to perform the assembly task safely and efficiently |

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| 1. **sign off** | | |
| **prepared by:**  **NAME: Arthur Baron von Wilcke /**  **Britney Malone / SEBASTIANO GUARNA** | **Lab Supervisor**  **Name: Michael Lee / Gavin paul** | **Date: 10/10/2023**  **Review Date:** |