**Mecanum wheel trolley safety and Environmental**

**1.-**The first safety concern comes when you sit down and start drawing the wheel and its accessories.

* **Electrocution** – when setting up your computer make sure all cables are secure, no loose wires
* **Body stressing** – choose the right chair for you and sit up straight in the chair, adjust your computer screen so you are comfortable
* **Dehydration** – take enough fluids the whole time you are in the classroom.

**2.-** Workshop activities

* **Slips trips and falls** – Maintain good house-keeping in the workshop area
* Keep tools and equipment you are going to use only and put the rest away
* Use walkways when you walk around workshop
* If class is large divide yourselves into work groups
* Make sure there is adequate illumination
* Make sure there is safe access to equipment
* **Body stressing, manual handling** – don’t lift anything that looks heavy by yourself call for help that is two-man lifts.
* Use correct lifting posture that is straight back and bend on the knees.
* Before picking anything do a trial lift
* Wear appropriate gloves
* **Working with dangerous machinery and equipment** - Do not operate any machinery unless trained to do so.
* When you operate a machine follow safety procedures for that particular machine.
* The biggest one is know how to start and stop the machine and what to do in an emergency.
* Sensible and cautious behaviour must be observed at all times.
* Hair to be kept neat and tidy, long hair is to be restrained by a ribbon, net or cap.
* PPE must be worn all times.
* Maintain a safe distance from operating machine if not the operator.
* Report immediately any incident or accident to the lecturer.
* Develop JSA for the task if necessary so that everyone doing the task knows all the hazards in the area and how to control them.
* Use the hierarchy of control

**1 Elimination**

**2 Substitution**

**3 Modification**

**4 Isolation**

**5 Engineering controls**

**6 Safe work practises**

**7 PPE**

* Follow workshop regulations dress code.
* Check /inspect machinery prior to using (Australian Standard AS3760). Check that all electrical equipment is tested, tagged and current. Check that RCDs are fitted where needed.
* When you use substances like cutting paste, machining coolant make sure to read the MSDS which comes with them or what is on the labelling.
* Do not remove guards on machinery, do not use if guards are missing (Australian standard AS4024.1.
* (Australian Standard AS1788.2) Follow this standard when you are going to use any abrasive material, e.g. grinders.
* Before operating compressed air equipment, make sure all hose joints are secure, read OCH Regs. 1996 pertaining compressed air.
* Follow Occupational Safety and Health Act 1984 (OSH) and Occupational Safety and Health Regulations 1996.
* To understand more about workshop safety, refer to the above.
* You can also read the Codes of practice approved in WA which are listed on the website of Worksafe (WA).

**OPERATIONAL SAFETY**

* The mecanum project must fitted with gadgets which make it safe to operate, these might be limit switches, proximity sensors or many others which may help have it operate as expected
* SWL must be calculated and put clearly for all to see
* All sharp edges from manufacture must be removed to eliminate the risk of cuts when personnel handle the gadget.
* When the robot is in operation interaction with humans must be closely monitored, be minimal or eliminated.
* The robot must be operated in a manner that does not harm or injure anyone.
* Only authorised personnel may operate the robot, i.e. people who have a good understanding of how the robot works.

**ENVIRONMENTAL SAFETY**

* This will be the management of the work environment and the facilities where the robot will be kept. Environmental safety has a lot to do with the flora and fauna surrounding a particular work area and in our case the only thing that can affect the two is the in-correct handling of rubbish leading to contamination of the environment.

1. **Good housekeeping**

* Spills should be immediately cleaned
* Waste should be segregated and put in marked bins and the bins must be correctly emptied regularly.
* Walkways should always be clear in this case the area the robot will operate must be clearly marked and signs put up.

1. **Emergency plans**

* There must be in place an emergency plan clearly laid out and stuck on the wall for all to see and refer/read and understand.
* In our case there must be a plan B if the robot does not follow what we want it to do
* Depending on the type of battery we choose we must have a special spill kit which will contain the type of spill we may have.

Reference for this was taken from the Code of Conduct for managing the work environment and facilities under section 274 of the Work Health and Safety Act.