

## Risk Assessment

Equipment or Process	Hazard Identification	Consequence	Likelihood	Risk Rating	Engineering Measures	Procedures	Protective equipment
Battery Pack							
	Spark	Med	High	High	Male output used to combine wires	Make sure batteries are always out of the casing unless in use.	Not applicable
	Electrical Fire	High	Low	Med	Male output used to combine wires.	Keep the battery pack on the table in case of spark, it will not light the carpet.	Fire extinguisher, Fire Blanket
	Circuit Shortage/Burnt Fingers	High	High	High	Male output used to combine wires.	Keep fingers away from wires. Only load batteries into pack when circuit is connected.	Rubber gloves
Resistors							
	Circuit Shortage	Med	High	Med	Regulate current with correct resistors	Make sure to use appropriate resistors where needed	Not applicable
	Power Surge	Med	Low	Med	Use an Arduino Uno that has a maximum voltage of 5V and low current	Control and monitor current and voltage that is being put into the circuit.	Safety Glasses, Rubber Gloves (if working with high power)
3D Printer							
	Skin burns	High	Low	Med	Glass shield to cover 3D printer, stopping human access. 3D printer will	Students must be supervised when near 3D printer. Only	Tap with cold water

					not operate if door is open.	operator must interact with 3D printer	
	Physical Injury (Removing Excess Plastic)	Med	High	Med	Use necessary force with tools once 3D printed object is clamped to table. Use blunt chisel	Student must scrape away from themselves to avoid injury.	Safety Glasses, Pliers, Table Clamp, Chisel, Rubber Gloves
Laser Cutter							
	Fire	High	High	High	Glass shield to cover laser cutter when in use. Keep area clean and free of debris and flammable material	Operator must always be supervising the laser cutter when in use. The shield should be down	Properly maintained fire extinguisher should be present
	Eye Damage	High	High	High	Glass shield diffuses the exposure which could cause severe eye damage	Operator must not look directly at the laser	Safety Glasses can diffuse the exposure