



Job Safety Analysis

These analyses identify the hazards for each step and the control measures for each hazard.


1. Launch/Retrieve ROV

		<h1 style="color: orange;">Job Safety Analysis Form</h1>	
Safety information for TecXotic -Monterrey Institute of Technology and Higher Education- Morelos, Mexico		Task:	LAUNCH/RETRIEVE ROV
		Name of Department:	Safety Office/Pilot Team
		Analyzed by:	Kim Marilú Yáñez Pérez
		Date:	05/10/2018
Required Personal Protective Equipment:			
1. Two or more operators 2. Life jacket		3. Non-slip, closed shoes 4. Sun protection (when necessary)	
Required/Recommended Trainings:			
Experience launching/ retrieving the ROV.			
TASK	HAZARDS	CONTROLS	
Pre-launch	Falling	Wear the required non-slip footwear. Inspect pool area for hazards before launching the ROV. One of the operators must always have a hand on the tether.	
	Electric shock	1. Verify all power in Control Unit is off 2. Verify electronic box is sealed 3. Ensure all tools are appropriately guarded and electrical appliances are protected by means 4. Ensure all extension cords are in a safe condition with plugs and connections properly wired.	
	Back strain	1. Kneel down 2. Stay low and near to pool edge 3. Avoid sharp twisting movements and do not over reach for ROV.	
Launch and Retrieval	Drowning	Never launch alone. Ensure all personnel wears a life jacket near pool.	
	Sunburn	Sunhat / sunglasses / sunscreen / protective clothing.	
	Electric shock	If leak is detected, immediately cut power to ROV.	


2. Operate acrylic laser cut

		<h1>Job Safety Analysis Form</h1>	
Safety information for TecXotic -Monterrey Institute of Technology and Higher Education- Morelos, Mexico		Task:	OPERATE ACRYLIC LASER CUTTER
		Name of Department:	Safety Office
		Analyzed by:	Kim Marilú Yáñez Pérez
		Date:	05/10/2018
Required Personal Protective Equipment:			
1. Protective glasses, ocular protection is mandatory 2. Gloves (if available).		3. Extinguisher	
Required/Recommended Trainings:			
Tutorial on laser cutting. Tutorial might be imparted by other members and/or experienced operators.			
TASK	HAZARDS	CONTROLS	
Carrying acrylic items	Dropping	1. Do not overload 2. Carry every acrylic item one at a time 3. Operate with a co-worker	
	Airborne particles	Do not inhale particles generated <u>as a result of laser applications</u> . May cause irritation to the respiratory track.	

3. Operate 3D printer

		<h2 style="color: orange;">Job Safety Analysis Form</h2>	
Safety information for TecXotic -Monterrey Institute of Technology and Higher Education- Morelos, Mexico		Task:	OPERATE 3D PRINTER
		Name of Department:	Safety Office
		Analyzed by:	Kim Marilú Yáñez Pérez
		Date:	05/10/2018
Required Personal Protective Equipment:			
1. Gloves (if available).		2. Extinguisher	
Required/Recommended Trainings:			
Tutorial on 3D printing. Tutorial might be imparted by other members and/or experienced operators.			
TASK	HAZARDS	CONTROLS	
Retire 3D pieces from the printer	Hand burn	Do not touch the nozzle or heat bed when the printer is printing or is warming up. Note that the temperature of the nozzle is 210-260 °C; heat bed temperature can reach over 100 °C. Temperatures above 40 °C can cause harm to human body.	
	Airborne particles	Do not inhale particles generated as a result of 3D printing. May cause irritation to the respiratory track.	

1. ROV Maintenance

		<h1>Job Safety Analysis Form</h1>	
Safety information for TecXotic -Monterrey Institute of Technology and Higher Education- Morelos, Mexico		Task:	ROV MAINTENANCE
		Name of Department:	Safety Office
		Analyzed by:	Kim Marilú Yáñez Pérez
		Date:	05/20/2018
Required Personal Protective Equipment:			
1. Antistatic wristband			
Required/Recommended Trainings:			
Operator must be part of, or be supervised by, a member of the Electronics Department or the Manufacturing Department.			
TASK	HAZARDS	CONTROLS	
Maintenance	Electric shock	1. Verify all power in Control Unit is off 2. Verify electronic box is dry. If not, proceed to dry it before unsealing it 3. Ensure all tools are appropriately guarded and electrical appliances are protected 4. Ensure all extension cords are in a safe condition with plugs and connections properly wired	
	Finger Damage	Make sure propellers have thruster guards before putting hands and fingers near them. Operator must wear protective gloves if thruster testing is needed.	