STANFORD UNIVERSITY

AUTONOMOUS SYSTEMS LAB-SPECIFIC TRAINING

Durand, Rms. 009 & 010B

	Training Goal	How Lab Fulfills Training Goal
Training	Ensure completion of all safety training before beginning lab work.	• General Safety and Emergency Preparedness (EHS-4200) – available online via Axess • Chemical Safety for Laboratories (EHS-1900) – available online via Axess • Compressed Gas Safety (EHS-2200) – available online via Axess • Lab-Specific Training and Lab Tour
Safety Roles	Know the health and safety responsibilities of the principal investigator, lab safety coordinator, and all group members.	All lab members are expected to be familiar with safety guidelines from training modules (EHS-4200,1900,2200) and SOPs for all appropriate lab activities (e.g. soldering and filling CO2 tanks). Any suspected safety hazards should first be reported to the lab safety coordinator, Ben Hockman. If equipment or infrastructural changes are needed to remedy the issue, the lab director, Prof. Marco Pavone, should be notified ASAP.
Safety Info	Know where to find material safety data sheets (MSDS), standard operating procedures (SOP), user manuals for equipment, journals, textbooks, etc.	All MSDS sheets and SOPs are located in designated spots near the corresponding equipment / storage location as well as in the box outside the lab.
Lab-Specific Hazards	Know the specific hazards that exist in the lab and which hazards are covered by existing SOPs.	• Soldering station: a SOP for operating the soldering iron is posted on the soldering station, as well as a container for solder waste. Importantly, a smoke absorber should be used at all times when soldering. • The net-enclosed area should be closed off from people during quadrotor experiments and safety glasses should be worn by anyone nearby. • The 3D printer should remain closed while printing/heating is in progress and all fingers should remain outside the build volume. • The SOP for operating the CO2 fill station on the loading dock is posted next to the fill station, and anyone using this fill station must be trained by Andrew Bylard. • A CO2 concentration monitor is located near the floor in Rm 010B to monitor the CO2 concentrations during spacecraft operation. Evacuate the room if the monitor rings.
Lab Operations	Know the Chemical Hygiene Plan SOP requirements and the lab's process for developing and reviewing new SOPs.	There are no high-risk chemicals or materials stored in rooms 009 and 010.
	Know the lab's chemical ordering, usage, and disposal procedures.	• New chemicals should be added to chemtracker. Ben Hockman is in charge of this process and should be notified any time a new chemical is introduced in the lab. • Solder waste is collected in a container labeled "solder waste" at the soldering station. It is picked up on request through wastetag.stanford.edu Ben Hockman is responsible for this. • No chemicals should be in the kitchen area of Rm 009B at any time.

	Know what is required personal protective equipment (PPE) for working in the lab, including where lab-provided PPE is stored such as safety glasses/goggles, cryogenic gloves, etc.	Safety glasses are located in the top of the red tool chest and at the quadrotor control station. They are required for anyone near the quadrotor test area when in use. Safety glasses should also be used in Rm. 010B with the free-flying robots on the granite table.
	Know the rules for being trained on and authorized to use the lab's specialized equipment, e.g., centrifuge, rotary evaporator, glove box, etc.	Special training is required to use the CO2 fill station on the loading dock. Andrew Bylard is the primary contact and trainer for this equipment.
	Know the lab's "Do's and Don'ts"	The area just inside room 009B (including the refrigerator, sink, and cabinets) is reserved for food storage/prep and should not be used to store any chemicals or other tools or materials. In general, for any task requiring PPE, at least one other person should be present in the Lab.
EMERGENCY EQUIPMENT & PROCEDURES	Know where to find safety equipment.	• Fire extinguishers are located in Room 9b (next to the door leading to the Aerospace Robotics Lab) and Room 10 (next to the cabinet immediately to the right of the door). • a phone is located on the shelf on the back wall of Rm. 009A • A first-aid kit is located in Room 10 (on the wall immediately to the left of the door). An additional shared first aid kit and an automated external defibrillator are located next to the elevators in the hallway. An oxygen bottle is available on the second floor, in the corridor in front of the ladies' restroom next to the elevators.
	Know the procedures for chemical, fire, and earthquake emergencies.	• The lab has no critical equipment that should be turned off before leaving the building. • The Emergency Assembly Point and the egress routes are indicated on a wall-mounted panel between the elevators in the hallway. The EAP for the Durand building is located on the south end of the lawn on Lomita Mall (towards the Main Quad). • To egress the building in an emergency from both Room 9 and Room 10, exit the room, then head south along the main hallway towards Room 026. Turn right at the first opportunity and leave through the marked entrance. If that route is unavailable, head north along the main hallway towards the loading dock. Turn left at the first opportunity, before the elevators, then turn right and open the emergency door to access the staircase to the first floor. Once there, exit through the emergency door.
	Know the incident and injury reporting procedures.	• All incidents and injuries should be reported using an incident investigation report (SU-17), which can be found at: https://web.stanford.edu/dept/EHS/prod/general/su17.pdf • Report spills and serious injuries at 650-725-9999 (5-9999 from a campus phone). One can request spill clean-up with this number, which is manned 24/7. • To call **911** from a campus phone, dial 9-911. From a cell phone, simply dial 911. • The occupational Health Center can be reached at **(650)725-5308** for non-emergencies only.

Lab member: _____

Lab member's signature: _____

Trainer's name: _____ Training date: _____

Signature of PI: _____