Interplanetary Initiative
Lab Manual

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Contact Information:

	Name	Email	Phone Number
Lab Supervisor	**Danny Jacobs**	**djacob2@asu.edu**	
II Lifeguard	Amisha Patel	apatel71@asu.edu	(602) 465-3698
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II Lifeguard	Matthew Adkins	mtadkins@asu.edu	(317) 508-1586
II Lifeguard	Pawan Vijayanagar	psvijaya@asu.edu	(480) 408-2886

Typical Topics and who to Contact (highest priority to lowest priority):

- Hazards that Occur in the Lab
    - Immediately contact any of the Lifeguards that are in the lab.
    - If the situation cannot be resolved with Lifeguards, contact the Lab Supervisor.
- Lab Injury
    - Notify present Lifeguard.
- Broken Equipment
    - Notify present Lifeguard.
- Lab Access and Availability
    - Any of the Lifeguards
- Specifications of the Lab (available equipment, number of people allowed).
    - Any of the Lifeguards

COVID-19 & General Lab Protocols:

Students are allowed to visit the lab only during open hours and must be accompanied and supervised by an Interplanetary Initiative staff member (II Lifeguard) at all times. As Arizona State University responds to COVID-19; we request all students entering the Lab to wear a mask at all times, observe and follow the **6 people per room** rule, maintain **6 ft distance** and follow the **CDC health & safety guidelines**.

Training Requirements for Lab Access:

At the bare minimum in order to have Lab Access, the following trainings **must** be completed:

- Fire Safety Training
- Laboratory Safety Training
- Waste Management Training
- Compressed Gas

For Student Workers, Faculty and Staff use the Career Edge Training Links:

- Fire Safety Training
- Laboratory Safety Training
- Waste Management Training
- Compressed Gas

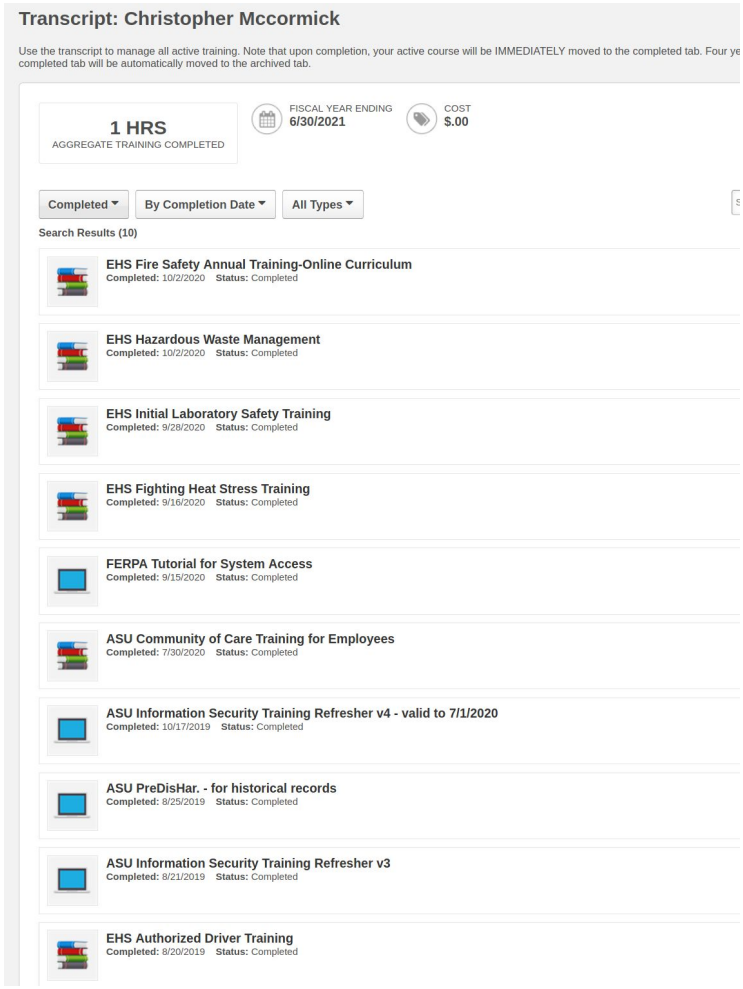
For Students, use the following Training Links:

- Fire Safety Training
- Laboratory Safety Training
- Waste Management Training
- Compressed Gas

All of this training can be found at ASU Career Edge Enrollment, however if you fail to find said training please contact us for help.

Submission Process of Training Transcript:

To verify that you have completed the required training, we ask that you upload a screenshot of your Transcript using the following form. An example screenshot is presented below:



Keep in mind that we have the requirement that everyone must resubmit their training screenshot on a **semester** basis.

Clean Room Rules & Code of Conduct:

- Socks for shoes
- Close toed shoes
- User Clothing
    - Hair net
    - Lab coat
    - Gloves
    - Shoe coverings
    - Do not touch hair or skin while in the cleanroom.
- Hands washed
- Clothing clean
- Facial hair covered (Hair net) or shaven
- Leave stations neat after
- Clean up after yourselves
- Any material taken outside of the clean room gets bagged in an ESD safe bag.
- Any material bringing into the lab, clean to remove dust, dirt, and other particles
- Lab Training must be completed before entering on EHS website
    - Hazardous materials
    - Fire safety
    - Lab Safety Training
- Have a storage plan in place for components in clean room
- If working with electronics, make sure to bring grounding equipment
- No food or drinks allowed in room
- Record in and out times outside of the lab
- When using equipment, make sure to have read the manual outside the clean room and know specifically how to work items before experimenting.
- Ensure the clean room is at its specified clean. Make sure all is working, if not, notify an employee
- Use a knife or scissors to open sealed containers. Ripping or tearing open containers contaminants.
- Clean your boots before entering by standing on a sticky mat kept outside the clean room.

Lab Agreement

Updated 30 Oct. 2020

Lab Training Checklist:

All lab users must be current in the following training. Screenshot proof can be uploaded at this form

- ❑ Fire Safety Training
- ❑ Laboratory Safety Training
- ❑ Waste Management Training
- ❑ Compressed Gas
- ❑ IILab Training Tour (see any IILab staff)

Lab guidelines:

The lab has lots of expensive equipment, some of it can be dangerous. These rules

- ❑ check-in with II-staff at the time of entry
- ❑ follow ASU and CDC protocols and limit overcrowding lab spaces (6/room)
- ❑ occupy the facility only while II staff are on site.
- ❑ Promptly report accidents, damaged or ill-functioning equipment.
- ❑ wear appropriate PPE during equipment usage
- ❑ follow clean room code of conduct to ensure its cleanliness
- ❑ Be aware of how to communicate and find documentation
- ❑ Avoid eating food in the lab area. One can use the lounge area for lunch/dinner
- ❑ Do not place laboratory equipments in the refrigerator in kitchen

Lab Communications and documentation

- Use appropriate lab slack channels for communication
- Shared Google Drive containing Lab Manual, Equipment Manuals, Project designs, and Material Safety Data Sheets
- Submit lab safety training screenshots & this signed document to this form

By signing this form, I have read and understood the agreement and agree to comply fully.

Name_____

Email: _____

Signature/Initials: _____ Date:_____

Equipment Guides:

Before proceeding, if you feel at any point that you would be endangering yourself, others, or the equipment, let an II-Lifeguard assist you in the learning process.

Logic Analyzer Guide (Digilent 410-338):

Initial Setup:

- **Note the analyzer is only compatible with 3.3V & 5V logic. Do not try to analyze any signals that exceed that limit.**
- Firstly, the Logic analyzer is supposed to be stored in the middle electronics station
    - If it is not there, ask any of the lifeguards and they should be able to help assist you in the process.
- Once retrieved, connect the logic analyzer to your computer using the provided micro USB cable.
- Download and install the Waveforms software from Digilent's website[1]
- Launch the application, and it should automatically detect the logic analyzer.

Using the Software:

- The software will provide you with a variety of options of analyzing the various inputs on the logic analyzer (standard waveform, protocol analysis).
- It also provides several controllable 3.3V Vout lines **but it is recommended to use an external power supply.**

[1] https://store.digilentinc.com/waveforms-download-only/