



Boyd Lab Standard Operating Procedures

1260 Hoover Hall

* COVID-19 Updates are shown in Blue in this document

Contents

I.	Experiential Course Participation Agreement.....	2
II.	Contact Information	3
III.	General.....	3
VIII.	Personal Protective Equipment	4
IX.	Safety Training Requirements.....	5
X.	Procedures for Submitting Job Requests to the Boyd Lab.....	6
XI.	Painting	6
XII.	Tool Checkout.....	6
XIII.	Project/Material Storage in Boyd Lab.....	6
XVI.	Emergency Action Plan	8
XVII.	Emergency Evacuation Map	10

I. Experiential Course Participation Agreement

PLEASE READ THIS PARTICIPATION AGREEMENT CAREFULLY

Iowa State University's Fall 2020 instructional delivery is guided by the primary imperatives of protecting the health and well-being of students, faculty, and staff while continuing the fundamental core missions of the university as a premier land-grant institution. Every person must contribute to the effort of keeping our living, learning and working spaces clean and healthy during this challenging time. ISU has established general health and safety expectations for all students and personnel as outlined in [Cyclones Care](#).

However, given the nature of the COVID-19 virus, **the university cannot guarantee an environment free of the risk of exposure to and illness from COVID-19.** By voluntarily participating in in-person instruction, students agree to abide by the university's COVID-19 related health and safety expectations. Students also acknowledge that while the university's reopening is informed by guidelines issued by the CDC as well as other federal, state and local health experts to help reduce the spread of infection, the risk of infection and possible illness from COVID-19 cannot be eliminated. Accordingly, all individuals should carefully assess and monitor their own health and safety before voluntarily participating in this course.

This document outlines potential risks and the expectation to comply with health and safety measures associated with attending Boyd Lab.

Boyd Lab contains experiential components that are critical to the achievement of its learning outcomes. Due to the nature of the course activities and/or the use of specialized equipment or spaces for the course, the department delivering this course has determined that these activities can only be effectively delivered in an in-person format in which not all standard health and safety measures may be feasible.

This mode of delivery may pose increased risk levels of exposure to COVID-19 for the students and personnel due to:

- 1) Settings where ideal physical distancing recommendations cannot be met.
- 2) Settings where use of face coverings may pose safety risks or prevent achieving course outcomes and are therefore not required or non-permissible.
- 3) Settings where disinfecting procedures may not be practical for all surfaces

The course syllabus will outline specific safety measures that will help mitigate the risks associated with the learning experience. Complying with the safety measures is required for participation in the course. If you are unable to or unwilling to participate in the course experience due to the increased risk level or inability to comply to the safety measures, you must notify the instructor immediately. The instructor and/or department will communicate alternate options, if available, including but not limited to dropping the course and taking the course in a future semester, identifying an alternative course or other options.

In signing this agreement, I acknowledge that I have read, understand, and accept the content of this statement regarding the health and safety expectations for the course, as well as the associated inherent risks of this course and that the instructor(s) will communicate any additional specific safety expectations for the course through the course syllabus or other course content. I agree to comply with the health and safety requirements in order to participate in the course. I also agree that I will notify the instructor immediately if I am unable or unwilling to participate in the course experience for reasons related to increased risk and/or compliance with safety measures.

Student Name _____

Student Signature _____ Date _____

II. Contact Information

Craig Severson
Teaching Lab Coordinator
1260C Hoover Hall
craigsev@iastate.edu
515-294-1715

III. General

Boyd Lab is located in room 1260 Hoover Hall. Boyd Lab has a variety of resources such as hand tools, power tools, milling and turning equipment, wood working equipment, metal-working equipment, MIG and TIG welders and a plasma cutter. Boyd Lab also processes job requests for a small fee. Additionally, Boyd provides support in the way of CAD and CAM expertise, design for manufacture expertise, design questions, etc.

IV. Access to/Use of the Facility

The Boyd Lab facility is open to Iowa State University students who have completed the required training as listed in Section IX: Safety Training Requirements of this document, who have an ISU affiliated project they wish to work on (research, class, club, etc.), and agree to abide by all rules established in this document and as specified by lab personnel. No personal projects are allowed in the lab.

Additionally, use of the facility is restricted to the hours posted on the website and on the doors; no work outside normal operating hours is permitted excepting the Boyd supervisors preapprove. In all cases, in order for the lab to operate, two trained techs must be present at all times. This can be a combination of techs or lab supervisors.

Key access to the Boyd Lab is restricted to Boyd Lab supervisors, Boyd Technicians, and other ME department lab coordinators that have a legitimate reason for access to the lab.

- Due to COVID-19 restrictions, a maximum occupancy of 18 is permissible at any given time. This is posted on the doors and enforced. Those people who wish to use the lab while it is full will be asked to come back later. This limit is highly dependent on the type of equipment being used and may be limited below the maximum on a case-by-case basis as determined by lab coordinators and lab technicians.
- Per University policy, anyone that expects that they are sick or have any of the symptoms associated with COVID-19 are not to use the Boyd Lab and should remain at home.
- The back hallway that leads to Boyd Lab is a one way heading from west to east. This policy has been made to ensure the safest possible environment for students. Students are expected to abide by this one-way policy. This may mean that students need to travel around the building to get back to the lab.
- Avoid waiting in hallways where possible. If possible, enter the building and go directly to class. Where it is not possible to avoid waiting in the hallway, please abide by social distance guidelines.
- All Persons will be required to sign into the lab using the posted sign-in process. Students will be expected to scan the QR code just inside the lab and use their mobile device to fill out the form. If the student does not have a phone capable of doing this, a technician can use the supplied iPad to log them in. This information will aid in usage data tracking for the lab as well as contact tracing, should that be necessary.

- All students will be expected to wait at the line just inside the lab until they are admitted by a technician or lab coordinator. Social distancing must be maintained during the entire time. Where not possible, people will be asked to come back later.
- There is a posted Entrance (south side of the room) and Exit (north side of the room). Students are expected to enter only at the entrance door and exit only at the exit door.
- Provided hand sanitizer should be used anytime a person enters or exits the room. There are both hand pumps and touch-free sanitizers available at both the entrance and exit.
- Students are expected practice and maintain social distancing at all times while in Hoover Hall and while using the Boyd Lab. Equipment has been arranged in a way that complies with social distancing guidelines.

V. **Priority**

Boyd Lab operates on a priority list. Mechanical Engineering (ME) courses always take first priority. This means that in the event someone outside the Mechanical Engineering department needs to use the facility, they will have next priority to an ME person. The priority list is as follows:

1. ME Capstone
2. ME 270
3. ME170
4. ME490
5. ME Department
6. Non-ME Department

Lab supervisors reserve the right to deviate from the above priority list as need dictates.

VI. **Hours of Operation**

Boyd Lab has specific hours that it will be open during a semester. These hours are highly dependent on the ME course Schedule and will fluctuate from semester-to-semester. For up-to-date hours, see the Boyd Lab webpage or the hours posted outside the lab. Lab supervisors reserve the right to change these hours as need be depending on technician availability.

VII. **Cameras**

Boyd Lab has cameras in place in order to monitor equipment 24-7.

VIII. **Personal Protective Equipment**

Students are required to use personal protective equipment (PPE) as follows:

- Clear lensed safety glasses with a Z87+ rating must be worn before starting any work with chemical, hand tools, power tools or equipment. Safety glasses are required in the equipment area of Boyd Lab and is clearly posted with “Safety Glasses Required” signs and black/yellow floor tape. Students are required to purchase their own safety glasses with Z87+ rating and clear lenses. Safety glasses can be purchased at the ISU Bookstore and from the vending machine in the North/East hallway of Hoover.
- Face masks must be worn at all times while in the lab until such a time as the University removes this restriction. Students are expected to provide their own face masks. Persons that do not have a face mask will not be permitted into the lab.
- Closed toe and heeled shoes must be worn at all times in Boyd Lab.
- Welding gloves, welding coat, long cotton pants, cotton shirt and welding helmets must be worn in the welding area. Welding PPE will be provided.
- Hearing protection is required when operating machines that produce excessive noise such as the planer, grinders, table router, etc. or when operations on a piece of equipment exceed 85db. Hearing protection will be provided.

- Gloves should be worn when working with sharp objects such as sheet metal. Gloves will be provided. Gloves should not be used on pieces of equipment that wearing gloves could pose an additional hazard such as grinders, lathes, saws, or any equipment that could grab the gloves and cause injury. This will be covered in hands-on training on a per equipment basis.
- Equipment sign-off badges must be worn at all times. Badges will be provided. It is the student's responsibility to maintain their own personal badge.
- Jewelry must be removed before operating any piece of equipment.
- Any loose hair, loose clothing, or other item that could be pulled into a machine should be tied up and out of the way.

IX. Safety Training Requirements

In order to use any piece of equipment in Boyd Lab, all persons must have completed the requirements listed below. All training is recorded on the Boyd Lab Canvas course. Students must be enrolled in the ME Boyd Lab Safety Course on Canvas to have access to the training requirements listed below. Consult the Boyd Lab webpage: <https://www.me.iastate.edu/undergraduate-programs/boyd-lab/> for details.

1. Shop Safety Fundamentals – Basic Procedures and Policies – Complete the online learning module and assessment. This requirement must be successfully completed before signing up for equipment hands-on training.
2. Boyd Lab Standard Operating Procedures – You are required to read this document in its entirety. If you are unclear with anything in this document please contact a Boyd Lab Supervisor.
3. Boyd Lab Equipment Specific Digital Training – In order to get hands-on training on equipment in Boyd Lab you must first complete any required equipment specific training listed on the Boyd Lab Canvas course.
4. Hands-on Equipment Training - To operate a piece of equipment in Boyd Lab you must first have completed the digital equipment specific training and hands-on training completed by a lab supervisor or lab technician. Once the Hands-On training is completed the lab supervisor or technician will digitally sign off in Canvas that you have completed the training.

You are not allowed to use equipment you are not certified on. Failure to complete both digital and hands-on training prior to using a piece of equipment in the lab will result in immediate dismissal from the facility.

If you've been trained on a machine but need to use a different process/setup that you haven't been taught see a lab tech or supervisor before you begin.

5. Equipment Sign-off Badges – Once you've received your hands-on training you will be signed-off electronically and your equipment badge will be stamped. You must wear your equipment sign off badges at all times while working in the lab. The badges with appropriate stamps will be a quick indication of which equipment you will be allowed to operate. You are not permitted to use any piece of equipment in the lab that you are not certified on.

COVID-19 Training Updates:

- Training will be done on an as need be basis. If a technician can quickly complete the job rather than train the person, in general, this will be the recommended course of action.
- Training will take place on a 1:1 basis and must be scheduled ahead of time on the Boyd Lab training signup calendar.

- Face masks must be worn at all times in Boyd Lab and throughout the training process.
- Technicians and students will maintain 6' social distancing while training at all times. Colored dots have been placed on the floor to aid with social distancing. Occasionally, it will be necessary to break that 6' distance to stop unsafe acts, to bring additional clarity to training, etc. These breaks in social distancing should be extremely brief and should still maintain the largest distance possible.
- Training will be restricted on high level equipment like the Lathe, Mill, CNC Mill, and Welders due to extended contact time required to train on these pieces as well as workload limits. All persons wanting to train on these pieces need to contact Craig for prior approval.
- Immediately after training, the Boyd technician will sanitize the equipment that was just used.

X. **Procedures for Submitting Job Requests to the Boyd Lab**

1. Go to the Mechanical Engineering Dept. webpage at <http://www.me.iastate.edu>
2. Click on Undergraduate Program, Fabrication Labs and then Boyd Lab
3. Click on Job Submissions
4. Complete online form. Be sure to attach/upload any documents necessary for the job request.
5. After submission, a quote will be generated by Boyd Lab and emailed to your advisor.
6. Upon approval of the charges and a valid account number, the job will be accepted.
7. Drop off all project materials to Boyd Lab.
8. You will be emailed when the job is complete.

* Job Requests will be severely limited during the duration of COVID-19 due to additional responsibilities.

XI. **Painting**

Only brush-on paint is permitted in the Boyd Lab facility. All painting should be done on cardboard on a table and be pre-approved by a lab supervisor. Any project left to dry in the lab should be tagged with name and contact information of the person doing the painting and also be preapproved by a lab supervisor.

XII. **Tool Checkout**

Boyd Lab allows for tools to be checked out to people. Tools cannot be checked out for a duration more than 2 days. Tool checkout is a privilege, not a right. You are responsible for returning the tools in proper working order. In the event the tools aren't returned on time or that they are damaged, the full replacement cost will be billed to your U-bill.

In the event tools are taken from the lab and not checked out, this will be considered theft and the authorities will be involved.

* For the duration of the COVID pandemic, tool checkout will NOT be available. Checkouts may be granted in special circumstances when pre-approved by Boyd supervisors. Tools that are checked out need to be properly disinfected prior to being returned.

XIII. **Project/Material Storage in Boyd Lab**

No materials from any project or club will be allowed to be stored in the Boyd Lab without explicit, pre-approval from the Boyd Lab supervisors. The exception to this is in the event of a job request.

XIV. **Boyd Lab Cleanup Policy**

It is your responsibility to clean up the area immediately around where you were working. You will be expected to:

- Clean all parts of the machine of dust or chips.
- Return all tools to their proper locations in the lab.
- Return the machine to its "default" working position. This may include dialing a mill in if you moved the head or squaring a vice if you took a vice of the table.
- Thoroughly sweep the area immediately around where you were working.

- Dispose of all chips, dust, and trash in the appropriate containers.
- Equipment must be disinfected immediately after each use. Technicians will be responsible for this and sanitizers will be provided.
- Common surfaces in the lab will be routinely sanitized several times a day by technicians to help prevent the spread of COVID-19.

In the case of classes using the facility, the last 10 minutes of the period will be reserved for cleaning and prepping the space for the next section. No work will take place during these last 10 minutes. All persons who were using the lab, will be expected to take place in the cleanup process.

XV. **IOWA GOOD SAMARITAN 613.17**

A person, who in good faith renders emergency care or assistance without compensation, shall not be liable for any civil damages for acts or omissions occurring at the place of an emergency or accident or while the person is in transit to or from the emergency or accident or while the person is at or being moved to or from an emergency shelter unless such acts or omissions constitute recklessness.

XVI. **Emergency Action Plan**
 BOYD LAB – 1260 HOOVER HALL
 Effective: August 6, 2020

Contacts:	Name	Office Phone	Cell / Pager	Home Phone
Professor/Supervisor	Per student section	Per student section	Per student section	Per student section
Emergency Contact	Craig Severson	515-294-1715	563-543-1010	Na
1 st Alternate	Tech Mentor on Duty			
2 nd Alternate				
3 rd Alternate				

The following procedures should be used in the event of an emergency.



Fire

1. Pull nearest fire alarm; notify building occupants.
2. Call 911.
3. Assist injured or disabled personnel.
4. Evacuate the building. Activate emergency shutoffs.
5. Attempt to use a fire extinguisher only if you have been trained.
6. Meet **on the east side of Marston Hall**.



Medical Emergency

1. Identify the medical emergency.
2. If life threatening, call 911.
3. Administer first aid, if properly trained.
4. Contact the injured person's supervisor.



Urgent Situation

(Suspicious person, package, activity, or bomb threat)

1. Call 911.
2. State who, what, where, when, why and how situation occurred.
3. If bomb threat, turn off all electronics.



Violent Incident

1. Avoid – evacuate when you can.
2. Deny – lock/block doors, turn off lights, silence phones.
3. Defend – distract, attack, subdue.
4. Call 911.



Severe Weather

1. If you hear outdoor sirens or a severe weather warning, **proceed to first floor restroom, interior classroom (1213, 1227, 1233)**.
2. Stay away from exterior doors and windows.
3. Stay in shelter until danger has passed.



Utility Outages

1. Identify in advance any critical research materials or processes that may be affected by utility outages.
2. Identify backup systems or alternate resources to employ.
3. Have backups in remote locations for data stored on computers.
4. Notify appropriate contacts.



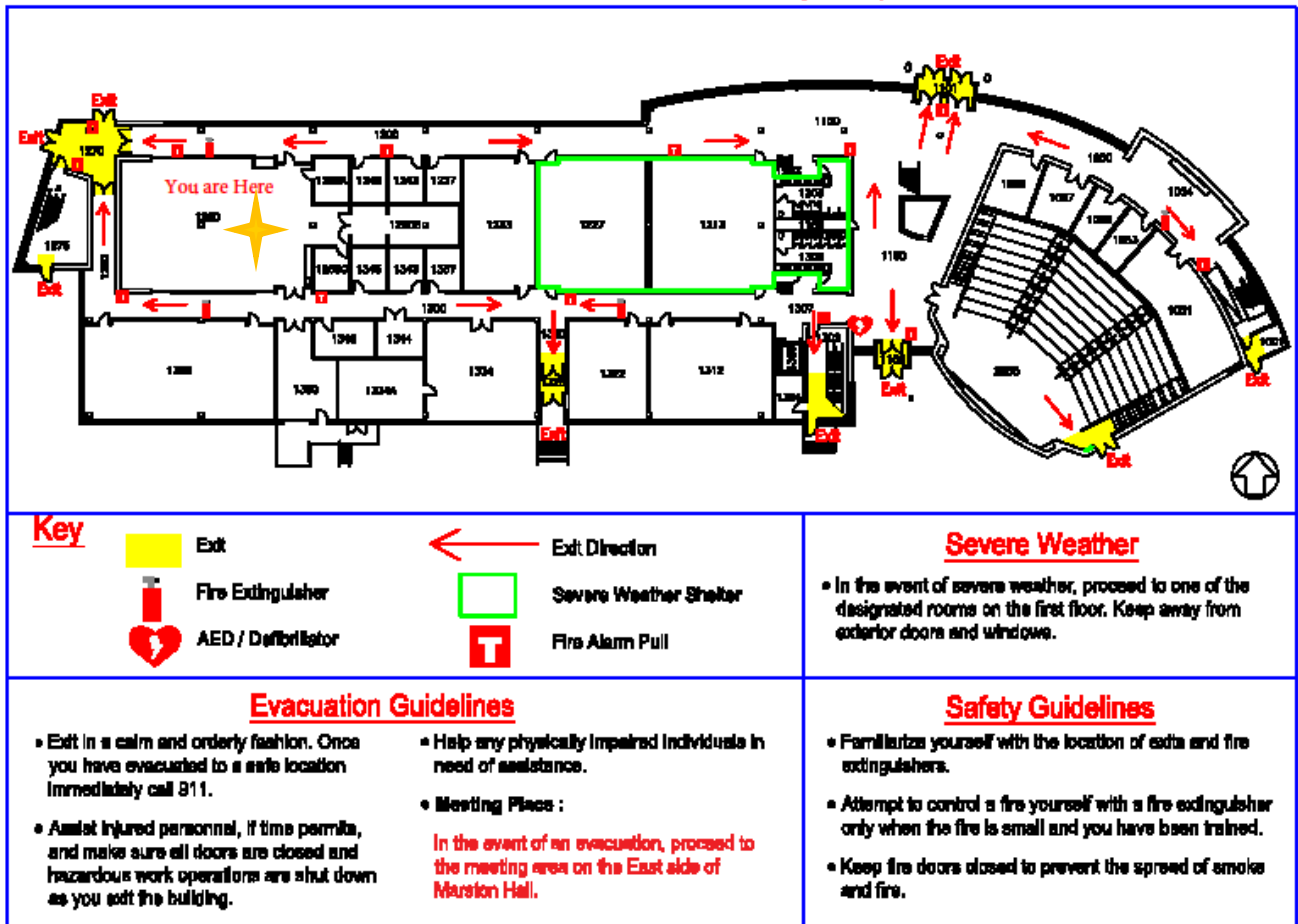
Chemical Spill – Small or Low Hazard, Indoors or Outdoors

1. Notify people in the immediate area.
2. Assist with injured persons.
3. Confine/ limit the spill.
4. Clean up spill following procedures on EH&S [Spills & Leaks](#) webpage.
5. A chemical spill kit is located **in 1260 behind Haas mill in a white, labeled bucket.**

Chemical Spill – Large or Hazardous, Indoors or Outdoors

1. Evacuate the immediate area and secure entrances or perimeter
 2. Pull the chemical spill alarm or fire alarm
 3. Dial 911. Report your name, chemical name, amount and location of spill.
 4. Assist injured personnel.
 5. Stay in a safe location until responders arrive.
-

Hoover Hall - First Floor Emergency Map



Department of Environmental Health and Safety, ehsinfo@iastate.edu, (515) 294-6359

Revised 11/7/2016