

DLC Shop Training

The purpose of the Discovery Learning Center (DLC) is for the development and manufacturing of items as needed for student projects. The DLC shall always be used in a safe and orderly manner. You are not authorized to use the Center or any equipment in it unless PROFESSIONAL STAFF supervision is present.

The DLC hours are posted each semester and you must plan your time accordingly. You are to comply with all direction given by supervisory staff. Failure to comply with the DLC directives will have consequences.

SAFETY RULES

I, _____, agree to strictly adhere to the following safety rules:
(Print your name clearly)

- **Proper Clothing:** Students shall wear jeans, a short sleeve shirt, closed toed shoes and protective eyewear in the Discovery Learning Center at all times. All fabrics shall be made of a natural fiber (cotton, wool, flax...).
- **Safety Glasses:** I will wear safety glasses at all times while in the DLC. If I wear regular prescription glasses, I will wear safety goggles over them.
- **Jewelry:** I will remove all rings, necklaces, bracelets and dangling earrings before operating any machinery or tools.
- **Loose Hair or Clothing:** I understand that loose hair and clothing are extremely dangerous. While in the DLC, I will tuck in my shirt, roll up long sleeves and tie back my hair.
- **NO hooded sweatshirts:** I will not wear a hooded sweatshirt.
- **NO sandals:** I will not wear open-toe shoes.
- **NO Shorts:** I will not wear shorts in the DLC.
- **NO Cell phones:** I will not use a cell phone in the machine shop.
- **Clean Up:** I will clean the machinery and any mess (sawdust, metal chips, spills, etc.) that I produced before leaving the DLC. Clean means the next machine user is unable to determine the material(s) I was using.
- **Return of Tools and Parts:** I will promptly return any tools, parts, bits, etc. to their proper place in the DLC.
- **Alcohol or Drugs:** No one under the influence of alcohol or drugs is allowed in the DLC. No alcohol or drugs are allowed in the DLC.

Commitment

I declare that I have read and agree to comply with all **SAFETY RULES** and **SAFETY GUIDELINES** for using the Discovery Learning Center. I understand that failure to follow the guidelines may result in the privilege of using the DLC being withdrawn as well as facing disciplinary actions.

Signature _____ e-mail _____ MUID _____
(Signed) (print)

Training Completed

I have trained the above student and have followed the guide during the training session.

Basic / Mill / Lathe Trainer _____ Date _____
(Circle one)

Basic Training

BAND SAW, DRILL PRESS, GRINDER AND HAND TOOLS

The purpose of this guide is to outline some of the basic knowledge for using the tooling in the Discovery Learning Center.

The outcome of this qualification process is to have a safe and intact operating environment. THIS INSTRUCTION WILL HELP YOU KEEP YOURSELF SAFE IN A HAZARDOUS ENVIRONMENT. THIS TRAINING DOES NOT MEAN YOU ARE A MACHINIST!

Basic Safety and Operations

Where is the first aid kit?

What is the phone number for emergencies?

Describe proper clothing requirements.

Explain the prohibition of Alcohol or Drugs.

Describe the procedure for dealing with injury.

What is the procedure for dealing with health issues such as heart attack, stroke or latex allergy?

Describe fire fighting procedures. Where are the fire extinguishers?

Describe chemical or hazmat material spill containment.

Describe how to deal with a spill of a selected material like oil or paint.

What are the proper chemical storage procedures of flammables and oils?

What are the shop hours of operations?

What is the two person rule?

What materials may be worked within the machine shop?

What are the hazards of any machining process?

Describe what shop cleanliness means.

How are the machines and the shop cleaned after use? Pixies?

Measurements and Layout

Demonstrate the proper use and care of a micrometer.

Demonstrate the proper use and care of a caliper.

Demonstrate the proper care and use of a height gage.

Demonstrate the proper use of a rule and square.

Demonstrate the proper use and care of gage blocks.

Drill Press and Threading Operations

Observe one use of the Solberg drill. Note fixture. Note drill holders.

Describe the different types of drill holders

Show how to install a chuck

Demonstrate how to install a taper drill

Demonstrate the proper selection of feed and speed.

Demonstrate how to thread a hole.

Band Saw Operations

Observe use of the band saw.

Show the methods of adjusting the speed of the saw.

Be able to indicate the blade welder.
Demonstrate the proper use of the band saw.
Describe how to change a blade of the saw.
Demonstrate how to properly adjust the speed of the saw for a given metal.

Belt Sander

Observe use of the belt sander. Note the methods of adjusting the belt.
Demonstrate the proper use of the belt sander.
Show how to turn on the dust collector.
What are the dangers of the grinding process? (sparks and dust)

Epilog 36EXT Laser

How does a laser work?
How does a laser engrave?
What are the proper settings for engraving a piece of wood?
How is the exhaust system set up for engraving a piece of wood?
What are the proper settings for engraving a piece of acrylic?
How is the vacuum exhaust system set up for engraving a piece of acrylic?
How does a laser cut plastic?
What kind of plastics can the laser cut?
Can the Epilog 36EXT cut metal? Engrave metal?

Hand Tools

What is the difference between a Phillips and Slot screwdriver?
What does a box end wrench look like?
What is a crescent wrench?
What is the hazard of a chisel?
How do you clean a file?
Where is the sandpaper kept?
Where is paint or lubricants stored?

Technician Interactions

What is the proper way to gain someone's attention in a shop?
What is the proper method to utilize a machine that is obviously being used by someone?
What is etiquette for borrowing personal tools?
How do you know which tools are personal?