ITLL Manufacturing Center Safety and Shop Orientation

Welcome! to the ITLL Manufacturing Center. We are here to help you turn your visions into reality. Our shop is open for ALL students of the Engineering College to support all course related shop needs. Our main mission is to support the ITLL Projects courses (GEEN/COEN 1400, 1410, 2400, 3400. Those students will receive access and services as our priority but all other courses are welcome as well.

What you need to know and do to stay safe.

- Always: Wear safety glasses at all times while in the shop.
- Remove watches, rings, bracelets, ties, scarves, draw strings, and loose clothes.
- Tie back long hair in a pony tail or bun.
- Check in to the shop using your Buff One card.
- Ask for help with any thing you are not completely sure about.
- Be patient. Don't attempt to start a conversation with someone while they are operating a machine. Wait until they have finished and turned off the machine.

- Never: Use any equipment unless you are supervised by staff or have been trained and certified by completing training to use the machine by shop staff.
- Wear open toed shoes (sandals/flip flops) while in the shop.
- Push buttons, pull levers, turn wheels or cranks if you don't know what they do!
- Engage in horseplay, act professionally.
- Leave the machine a mess. Blow off all debris and sweep up and wipe down.

Incase Of Emergency

If an injury occurs while you are in the shop you should dial 911 from the phone by the printers just outside the main entrance to the shop. This phone routes to a campus operator. Tell the operator you need help in the ITLL building Room 2B50.

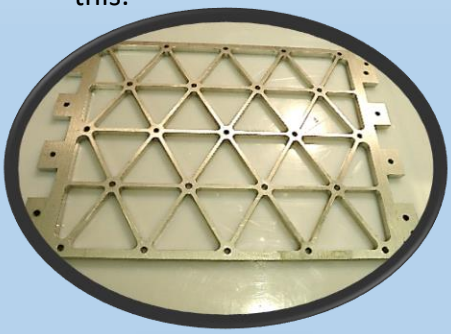
Now Let's Explore!

What's Here and What Can We Do With It?

CNC Vertical Milling Center. We have two. They can make complex parts like this

CNC Lathe. Makes complex parts like this.

Manual/CNC Mill. We have two. They can make parts like this.



Use the machine in combinations to make parts like these.

Manual Mills and Lathes are used to make parts like the BevKey. This is what you'll make for the training project.

Wood Lathe

Radial Arm Saw

Table Saw

Drill Press

What other stuff should we know about ?

- Bring A Drawing – We require that you bring a drawing with dimensions when you come to make things in the shop. This makes communication much more clear and effective.
- Ask Us About Material – Before you buy material for your parts, consult with one of the shop staff. Students frequently buy the wrong size or shape materials and then have to return it later. Ask us first to avoid this setback.
- Other Resources On Campus – Sometimes the ITLL shop can be full of students and access to the equipment maybe limited. Other shops on campus may be available to help you out.

  Idea Forge For Welding, Metal Working and Woodworking Etc.
  http://www.colorado.edu/engineering/giving/college-priorities/idea-forge

  Physics Trades Shop For Welding and Metal Working
  http://www.colorado.edu/physics/partners/trades-teaching-lab

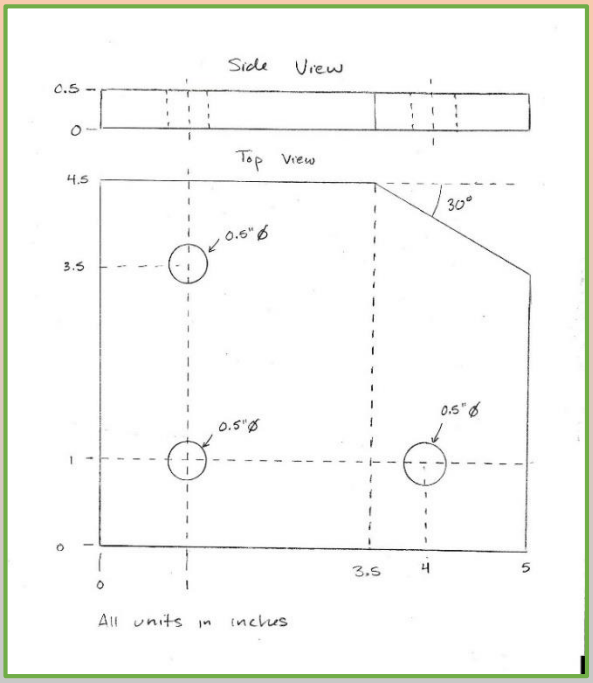
  Physics Instrument Shop For Abrasive Waterjet Cutting (may be a charge).
  http://www.colorado.edu/physics/partners/precision-instrument-shop

  Aerospace Machine Shop
  http://www.colorado.edu/aerospace/facultystaff/aes-machine-shop

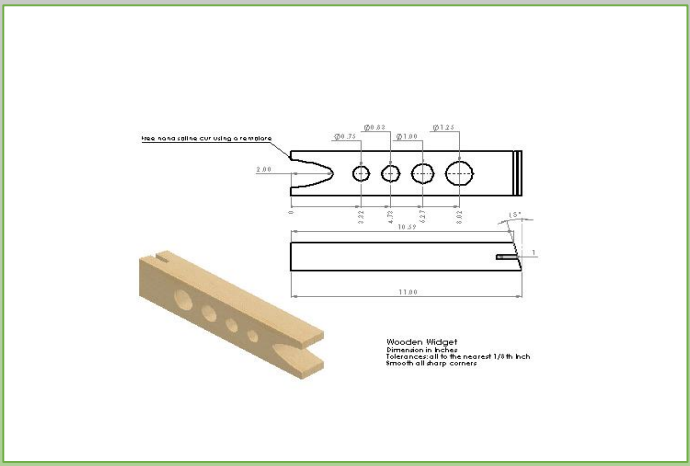
  ITLL Website Resources For Local Goods and Services
  https://itll.colorado.edu/manufacturing_center/manufacturing_resources/

  ITLL Project Depot
  Located in the South West corner in the basement level of the ITLL. You can find reclaimed materials for your project work including nuts, bolts, screws, etc…

What Does My Drawing Need To Include?



At a minimum, please bring a neatly hand drawn sketch of the part/s you want to make. Make sure all features required a completely and accurately dimensioned. Always state the units used.



For more complicated parts use a CAD program such as Solidworks to create a model and drawing from the model. Use as many views as needed to accurately display all the features you intend to create on the part. Neatly place dimensions and leader lines for clarity. Use hidden lines, angles, hole call outs, ect. to indicate all features.