

CNC Milling

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CNC machine stands for **computer numerically controlled** machine, which means these tools have the ability to cut select materials with extreme precision using router bits. This process is one of the most expensive ways of working within the digital fabrication shop, and requires the most attention to detail. It is recommended to schedule a consultation with a digital shop technician before selecting this process for your project. Models take from 1-36 hours to create, depending on the complexity and size of the model, the type of material being milled, and the type of finish requested. Only one mill job can be run at a time; therefore, students should plan to queue their files several days in advance of deadlines. During peak times, the wait can be more than a week.

CNC Machine Types

The VPA has three CNC machines across our digital fabrication department. These machines are intended for wood, foam, and plastics. Before committing to which machine you like to work with read through the following machine specs to get an idea as to which one is right for your project.

Large Techno CNC Machine

The Techno CNC can process hardwoods, softwoods, dense foams, and plastic sheets. The maximum material size for this machine is 96inx48inx4in. The quality and duration of the job depends on the type of router bits and type of milling job. For a more accurate quote, contact the digital shop technician. This machine is located in the Warehouse.

** This machine has a minimum cutting fee of \$15.00 this includes 30 minutes of cutting and 30 minutes of file setup. After the initial 30 minutes, cut time and file preparation accumulate at a rate of \$0.25 a minute. First two cutting bits are free any additional bit changes add \$5.00 per bit.**

Small Techno CNC Machine

The Techno CNC can process hardwoods, softwoods, dense foams, and plastic sheets. The maximum material size for this machine is 48inx24inx4in. The quality and duration of the job depends on the type of router bits and type of milling job. For a more accurate quote, contact the digital shop technician. This machine is located in the Warehouse

** This machine has a minimum cutting fee of \$15.00 this includes 30 minutes of cutting and 30 minutes of file setup. After the initial 30 minutes, cut time and file preparation accumulate at a rate of \$0.25 a minute. First two cutting bits are free any additional bit changes add \$5.00 per bit.**

~~Shop-Bot CNC Machine~~

~~The Shop-Bot CNC can process hardwoods, softwoods, dense foams, and plastic sheets. The maximum material size for this machine is 96inx48inx4in. The quality and duration of the job depends on the type of router bits and type of milling job. For a more accurate quote, contact the digital shop technician. This machine is located in the Comstock Arts Building.~~

~~** This machine has no minimum cutting fee and is only operated by students who have received the appropriate training. Jobs on this machine cannot exceed 6 hours of cut time. Students can rent cutting bits from the shop for a fee of \$5.00 per bit per job. If student supply their own bits this process is 100% free (excluding the price of material).*~~

Material Usage

- All materials used for CNC Milling must be checked by a technician on staff before loading the material on to the machine.
- Severely bent, warped, or damaged material will not be allowed on any CNC machine.
- All unknown materials will require the submission of a material safety data sheet.
- Most woods, foams, and plastics are CNC compatible.
- Students can supply their own materials or buy them directly from the shop through Papercut.
- Before making any material purchases check with a technician on staff if the material you would like to use is compatible with the process.
- Denser materials take longer to machine. Keep this in mind when budgeting for a project.

File Submission For CNC Milling/Cutting

- 3dm. files are the preferred method for the file submission process, however we will accept; AI. Files, DXF. Files, and DWG. Files. Keep in mind the longer it takes a technician to process the file the more costly the CNC job will be.

- Submit your file through the File Submission tab on blackboard. Specify which machine you would like to cut your file on, what type of stock you are cutting, and if you are buying the stock directly from the shop or supplying it yourself.
- If you plan to supply your own material, it needs to be dropped off before we can digitally process the file.
- Plan to schedule a consultation with a digital technician to ensure the cut is processed exactly how you intend it to be.