

CNC Routing

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What are the CNC Routers?



A CNC Router is a computer controlled machine that has a mounted spindle, which holds a cutting tool. It is typically set up with 3 directions of movement referred to as the X, Y and Z axis. This allows the machine to cut in 3 Dimensions.

CNC machining is a subtractive process. Starting with a block of material the cutting tool cuts away the material that is not needed. This material is extracted to a collection bag outside.

CNC Routers can cut 2D Files (for example: Flat pack furniture) and 3D Files (for example: Landscapes)

We have 2 CNC Routers in the 3D Workshop

The **ISEL Flat Com 40** is in the Woodwork Room.

- Maximum Material Size: 1000mm x 700mm x 75mm

The **Roland Mini Mill** is a small test machine located in the 3D Print room

- Maximum Material Size: 200mm x 150mm x 50mm

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How do I book the CNC Router?

All CNC Routing must be booked with a technician and files emailed. No drop in slots are available.

The CNC Routers are staff run by appointment. For any queries, specialist support or bookings please email 3dworkshop.lcc@arts.ac.uk. When emailing to book it is helpful to have a file ready to send the Technician. This will allow us to give you a more accurate timescale.

When your file is ready the Technician will program the file through ArtCAM. ArtCAM is a software that tells the CNC router which tools to use, where to cut and other vital information.

Please allow plenty of time for CNC projects.

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What materials can I use on the CNC Router?

Wood

Soft Wood
Some Hard Woods
Plywood

Plastic

Acrylic
Polycarbonate

Foam

Styrofoam
Polyurethane Foam (Modelling Board)

Others

Aluminium Composite Panels
Cork

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How much does it cost and how can I pay?

There is currently no charge for using the CNC router. You will however need to pay for or supply the material.

See our [Materials page](#) for more info on the materials we sell and where to purchase materials we don't stock.

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File Preparation

2D Files

- 2D file must be vector or paths
- Text must be outlined
- Close Vectors and paths
- At least 20mm between pieces and edge of material
- You can prepare your files in any software but you must export is as .DXF

3D Files

- Scale model to real life size
- You can prepare your files in any software but you must export is as .STL

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CNC Cut Slot Boxes



CNC routing is a quick and easy way to create a Slot Box. On the left you can download the files for A4 and A5 sized slot boxes like the one above. These files are for reference only. They have been prepared and programmed so that they can be run on the CNC Router.

[**A4 Slot Box - Short Side Opening**](#)

[**A4 Slot Box - Long Side Opening**](#)

[**A5 Slot Box - Short Side Opening**](#)

[**A5 Slot Box - Long Side Opening**](#)

The boxes are made with a 760 x 506 sheet of 6mm Birch Plywood, which costs £4.00 A4 box Internal Dimensions - 310 x 220mm A5 box Internal Dimensions - 244 x 158mm All boxes have an

internal depth of 60mm

After cutting there is some cleaning up and sanding necessary before the box is glued together and clamped. Finished examples can be found in the display window in the 3D workshop.

If you want a different slot box that is possible but it will take longer because it has to be programmed before machining. Use the files that are available to download on the left of this page as a starting point and alter until you have the desired box.

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