

SECTION 3 : 3D PRINTING AT D-FAB

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The MADA Digital Fabrication Workshop offers a range of 3D printing options that enable students to successfully create prototypes in a range of materials. With the printing technologies available in the Digital Fabrication Workshop it is possible to prototype a wide range of geometries. Students can choose between:



Plastic filament (FDM)



Resin (SLA)



Powder (Plaster)

Fused Deposition Modelling or FDM printing, is a popular choice and is easily accessible for students new to 3D printing technology. The FDM printing process involves heating thermoplastic filament to its melting point and then extruding it layer by layer to 'build' an object. We currently have six M200 and three M300 Zortrax printers (capable of printing larger objects), as well as five Ultimaker printers operational in the workshop.

The FDM printers are available for students to use independently after completing appropriate training. Information with regards to D-Fab workshop access can be found in "Section 1 : Getting Access"

Students can also make use of technical staff operated 3D printers.

We currently operate three Formlabs Form 2.0 which use a method of printing called Stereolithographic Apparatus or more commonly known as SLA printing. This involves a process called photopolymerization by which liquid resin is 'cured' or made solid layer by layer by targeting it with a UV beam.

We also operate a Project 660Pro Printer which is a large format printer capable of printing full CMYK colour/ texture models. The printer works by 'binding' powder layer by layer to create a 3D form, whilst applying the colour and glue every layer. This option is suitable for models that would otherwise use an excessive amount of support. It is not suitable for working parts.

Students and staff are required to familiarize themselves with the process of FDM printing and the printers available at the workshop in order to use them independently.

All information from here on is relevant for the successful completing of the 3D Printing Quiz. Please ensure you read all sections carefully.

You have now begun the online training that will enable you to achieve 100% score in the 3D Printing Quiz

	Maximum Build Volume	Storage Device	Material In Use	Cost	Operator	Slicing Software
Zortrax M200	200 x 200 x 180 mm	SD Card	ABS, HIPS, Z-GLASS	Free	Student	Z-Suite
Zortrax M200	300 x 300 x 300 mm	SD Card	ABS, HIPS, Z-GLASS	Free	Student	Z-Suite
Ultimaker 2 Extended +	223 x 223 x 305 mm	SD Card	PLA	Free	Student	Cura
Ultimaker 3 Extended	215 x 215 x 300 mm	USB	PLA	Free	Student	Cura
Ultimaker 3 Extended	215 x 215 x 300 mm	N / A	PLA + PVA	35c per g	Technical Staff	N / A
German RepRap x 350	350 x 200 x 210 mm	N / A	ABS / PLA	Consult Staff	Technical Staff	N / A
German RepRap x 500	500 x 400 x 450 mm	N / A	ABS / PLA	Consult Staff	Technical Staff	N / A
Formlab Form 2	145 x 145 x 175 mm	N / A	RESIN	45 c per mL	Technical Staff	N / A
Project 660 Pro	254 x 381x 203 mm	N / A	POWDER	75 c per cubic cm	Technical Staff	N / A