

# FDM Printing Guide:

-FDM (Fuse Deposition Modeling) prints high quality 3D parts by extruding monochromatic ABS plastic. The Fab Lab uses a Stratasys F270 printer for this process. It also uses a support material which is dissolved after printing is complete.

-Place your design into the '**F270 FDM Printer Template**' file found on either:

-**Fab Lab Website:** <https://www.design.upenn.edu/fab-lab/downloads>

-**Juno Server:** \\juno\Public\DigitalFabrication\3D-Printing-Templates-Tutorials

-The black outlined bounding box in the template is the maximum printable size at 10 x 12 x 12 inches. **You may have multiple objects floating within this box.**

-Assign all objects to the '**Closed Form.**' Delete any extra layers or data in your template file. **Files must be reduced to 64MB or smaller.**

-Be sure that your object is closed. Any open parts to your object will result in a failed print. **Use the Rhino command 'Showedges' on your object** - any found/highlighted **naked** or **non-manifold** edges can result in printing errors. However, the FDM printing process generally is more forgiving with this than colored Resin Printing.

-**The smallest recommended object thickness is 0.06 inches for FDM printing.** Anything under 0.06 inches printed in ABS plastic has a potential of 'stringing' or 'fraying' while printing, resulting in a failed part.

-**Material costs will always be calculated before printing.** You may print objects that are at risk of failure, however you must sign an acknowledgment form in order to proceed.

