7 Key Steps to Print your 3D Model at our McNaughton Center

1. Design your 3D model in one of the supported file formats (*.stl*, *.thing*, *.obj*) from a 3D modelling software [FAQs 1, 3].
2. Ensure your model does not violate our printing requirements and your model file does not go over the maximum size. Take a look at our ***Summary of 3D Printing***. Familiarize yourself with our printing prices at our ***McNaughton Center page*** [FAQs 1, 2, 4, 5].
3. Fill in your ***3D Printing Request form***.
4. Email your STL file to ***ieee.mcgill@gmail.com*** and a McNaughton Officer will confirm your 3D model before the printing process.
5. Printing process will usually take around 3 business days. You will be notified by email will once your 3D model has been successfully printed.
6. Upon receiving your invoice, pay via Interac Email Transfer or by Cash priced by the total mass of the printed model [FAQ 5].
7. Book a pick-up time to collect your printed item(s) at the McNaughton Center (Room MC543, McConnell Engineering Building).

Frequently Asked Questions *(updates-in-progress)*

1. What are the common 3D modelling software? Any 3DP beginner materials?

- Download: *Sketchup*, *Thingiverse*, *TinkerCAD*, *OpenSCAD*, AutoCAD, Blender
- Review "*Open-Source 3DP Presentation*" to learn more about 3D printing by Anqi Xu
- Take a look at our ***Summary of 3D Printing***

2. How do I estimate my 3D model's material use and cost?

- Download *MakerBot Desktop* and select "***MakerBot Replicator 2***" printer.
- Open your 3D model using the downloaded MakerWare software. If prompted with "***Put object on platform?***", then select "**Move to Platform**". This ensures your 3D model is not floating, but rather is fixed onto the printer platform's surface.
- Next click on **SETTINGS**, select the printing **Resolution** (Low, Standard, or High) and whether you need a **Raft** and/or **Supports**. You can even change the **Quality** under ***Advanced Options***. **DO NOT CHANGE** the **Temperature** and **Speed** settings.
- Once you're done, click **Save Settings**
- Click on **EXPORT PRINT FILE**. You can then see the **Print Time** (*e.g. About 1h 25m*) and **Filament** material use (*e.g. 35.00 g*). Now you know using our unit price how much your 3D printed model will cost and how long it will take to print!
- Send us your 3D model via *email* upon filling the ***3D Printing Request form.***

3. What does *.stl* stand for?

The file format *.stl* stands for **ST**ereo**L**ithography.

4. What are the 3D printer specifications/limitations?

This has been directly obtained from MakerBot Replicator 2 User Manual:

Print Technology:	Fused Filament Fabrication
Build Volume:	11.2 L x 6.0 W x 6.1 H in [28.5 x 15.3 x 15.5 cm]
Layer Resolution:	High 100 microns [0.0039 in]
	Standard 200 microns [0.0078 in]
	Low 300 microns [0.0118 in]
Positioning Precision:	XY: 11 microns [0.0004 in];
	Z: 2.5 microns [0.0001 in]
Filament Diameter:	1.75 mm [0.069 in]
Nozzle Diameter:	0.4 mm [0.015 in]
Software Bundle:	MakerBot MakerWare™
File Types:	.stl, .obj, .thing
Supports:	Windows (XP 32 bit/7+)
	Ubuntu Linux (12.04+)
	Mac OS X (10.6 64 bit/10.7+)

5. How much does it cost to request for printing?

IEEE Members get **50% discount!** For IEEE members, the printing cost is $1.00 per 10g of material use plus $1.00 per 1hr of printing time. For non-IEEE members, the printing cost is $2.00 per 10g of material use plus $2.00 per 1hr of printing time.