3D Printing Basics

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Today we'll cover:

- What is 3D printing?
- Reasons to 3D print
- Ways to 3D print
- Free Creation tools
- Thingiverse
- Downloading and printing using MakerBot

By the end of this class you will be:

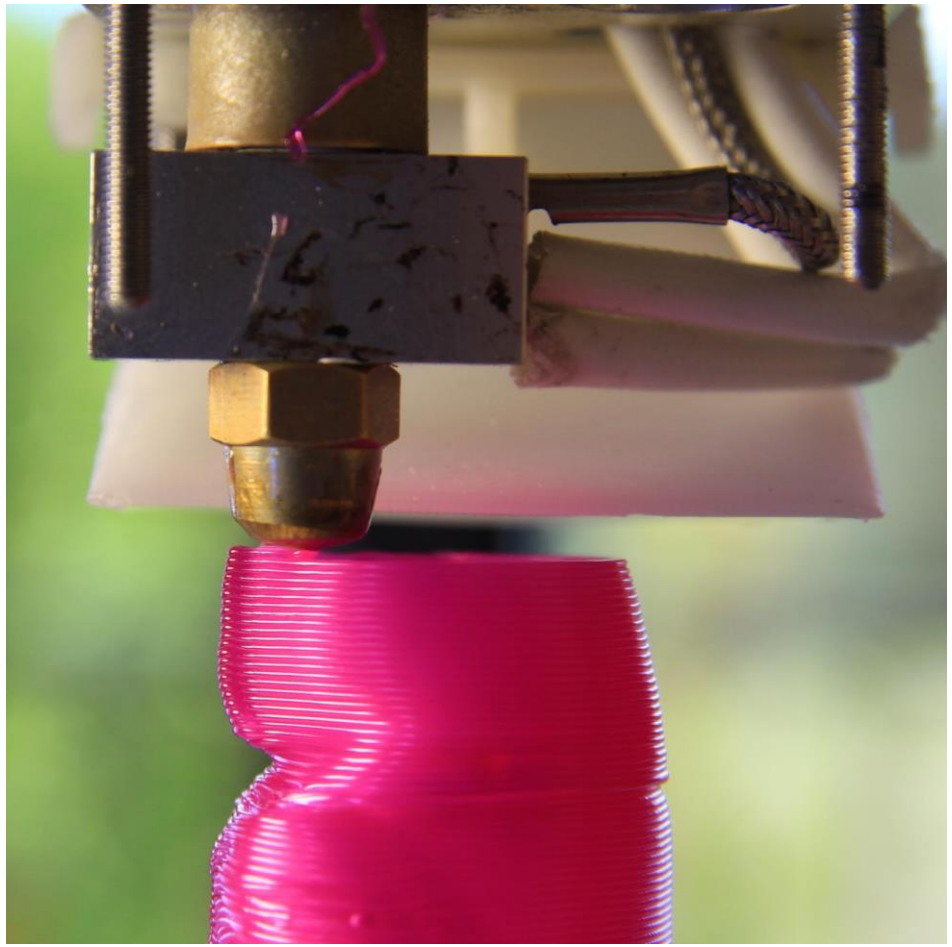
- Familiar with the basic elements of 3D printing
- And be able to download and print from Thingiverse

3D printing provides a variety of practical uses, but it is also a way to learn valuable computer modeling skills.

In addition, Elmhurst is a place to offer cutting edge technology not easily available to the public.

What is it?

A 3D printer works essentially like a traditional printer except it prints in plastic layers to make 3-dimensional designs. 3D printers can print in several different materials including plastic, limestone, and even wood and metal.



Some reasons you may use a 3D printer include:

- Replacing a broken cabinet handle
- Making fun gifts
- Printing the case for a prototype electronic component
- And maybe most importantly, learning to use 3D printing software is a valuable skill

Print

or

Create?

So today we'll only cover the basics of using predesigned files. There are many ways to create your own designs using free creation tools.

Tinkercad

- Web-based 3D modeling software
- Includes lesson modules that lead you through 3D design basics
- Great beginner design platform

123D Catch app

- Take photos and create 3D scans of virtually any existing object with this app
- Use with a mobile device

123D Design

- Powerful yet simple 3D creation and editing tool which supports many new 3D printers
- Part of the vast Autodesk suite of 3D tools
- Great stepping stone for more advanced 3D design software, like Maya
- Other free Autodesk software

Sculptris

- Beginner digital sculpting tool
- Great stepping stone for more advanced digital sculpting software, like ZBrush

Blender

- 3D animation suite
- Supports the entirety of the 3D pipeline—modeling, rigging, animation, simulation, rendering, compositing and motion tracking, even video editing and game creation

MakerBot Desktop

3D printing solution for discovering, managing, and sharing your 3D prints

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Free Creation Tools

- 3D printing takes time!
- Size of prints is limited to the size of the MakerBot's work area
- Overly complicated designs may print incorrectly or with minor to major errors in the layers
- At this point you can only 3D print in one color at a time per print

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3D Printing Limitations

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Thingiverse

Downloading and Printing:

1. Pulling a model down from Thingiverse
2. Importing into the MakerBot software
3. Preparing the item to print by rotating, moving, and resizing the object
4. Exporting and previewing the print for any complications
5. Printing from a usb

The more quality + strength + size = longer prints

Intermediate 3D Printing Software: 123D Design
Monday, 7:00pm July 20th

Intermediate 3D Printing Software: Sculptris
Thursday, 7:00pm August 20th

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