

Weekend Workshop: 3D Printing Essentials

Course Syllabus - Hands-on 3D Printing for Adults, No Experience Needed

Duration: 6 Hours total **Sessions:** 2 x 3 Hours **Schedule:** Saturday + Sunday **Level:** Complete Beginners

A focused weekend crash course for adults who want to understand 3D printing without the fluff. Two practical sessions over a weekend - enough to go from complete beginner to operating a printer, designing your own objects, fixing common issues, and knowing exactly what to do next.

WHAT YOU'LL BE ABLE TO DO

- Understand how a 3D printer works and what it can realistically make.
- Set up and operate a printer from scratch.
- Find ready-made designs online and print them.
- Design a simple object from scratch using free software.
- Spot and fix the most common problems you'll run into.
- Decide confidently whether a 3D printer is right for you.

WHAT HAPPENS EACH DAY

Day 1 - Sat **Getting Started - Your First Print**

- How FDM 3D printing works - building objects one layer at a time
- What 3D printing can and can't realistically do
- Setting up the printer: loading filament, cleaning the build plate, calibration
- Finding and downloading designs from Thingiverse and Printables
- Slicing a model: key settings explained in plain English
- Watching and understanding your first print as it happens
- PLA vs PETG vs specialty filaments - which to use when

Day 2 - Sun **Design It Yourself - From Idea to Printed Object**

- Introduction to Fusion 360 - professional design software, free for personal use
- Basic shapes, combining and cutting geometry to make custom parts
- Taking measurements and turning them into a printable design
- Understanding tolerances - why parts need a little extra clearance
- Common print problems: nozzle clogs, warping, stringing - and how to fix them
- Should you buy a printer? What to look for and what to budget
- Communities and resources to keep learning after the workshop