

This syllabus is intended to aid instructors in providing training for this tool, and for quick reference by existing users. It is not intended to teach you the tool by itself.

1. Safety

1.1. PPE

- None necessary during ordinary use.

1.2. Risks

- Burn from heated bed or hot-end
- Fire started due to heated bed or hot-end
- Body part or clothing caught in printer mechanism
- Hazardous gasses

2. Startup checks

- Filament loaded is expected type
- Bed and hotend can move freely
- Bed is clean and clear
- Correct nozzle is installed and enabled in software
- Air extraction is enabled if necessary

3. Usage

3.1. Starting the machine

- The printer should be left powered on and passive. If it is not, check with tools@edinburghhacklab.com that it can be powered on safely.
- Wipe the bed down with isopropyl alcohol and blue roll. Do not touch the bed after this process has been completed.
- Upload your file to the web interface.
- If changing nozzle:
 - unload filament
 - unscrew and remove nozzle
 - load new nozzle
 - load filament
 - edit the `toolhead.cfg` file to enable the correct nozzle
- Observe the printer begin the print. The first layer should always be watched in case of defects or malfunction. **TODO: how do we manage ventilation?**

3.2. Stopping the machine

- The printer should stop and cool normally when the print is finished.
- If the print must be cancelled, do so using the web interface or the menu. Only cancel your own prints, or the prints of others with their express permission.

3.3. General

- Keep your hands clear of the heated bed and hotend while prints are in progress to avoid pinching and burns.
- Be aware of the door state. In general:
 - PLA, matte PLA, PLA+: open
 - TPU: open
 - PETG: either
 - ABS: closed
 - ASA: closed
 - PA: closed

3.4. Materials

- Only use the following materials from reputable sellers:
 - PLA (including matte PLA and PLA+)
 - PETG
 - TPU
 - ABS (with external ventilation)
 - ASA (with external ventilation)
 - PA (with external ventilation)
- Do not use materials if:
 - they have inclusions, such as Glow-In-The-Dark, carbon fibre (CF), or glass fibre (GF)
 - they have previously caused clogs or jams in printers in the lab
- If in doubt, ask.

3.5. Cleaning up

- Remove your print and any skirt or purge lines from the bed.

4. Maintenance**4.1. General**

- Contact tools@edinburghhacklab.com if you encounter any of the following:
 - repeated build failures with the same file, filament and failure mode
 - loud screeching or grinding sounds

5. Other