

PROF. DR.-ING. MARK SCHUTERA

3D PRINTING

UNFINISHED LECTURE NOTES

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These notes are, by their very nature, unfinished, and they improve with every reader. If you spot an error, disagree with a framing, or want to add a source, a question, or a position, open a pull request at https://github.com/Quillstacks/LectureMaterial/tree/main/lecturenotes/notes_3dprinting. Every contribution is welcome.



Quickstart

2026-09-02 · tender rosehip Maulwurf

Log In

BAMBU STUDIO IS THE COMPANION SOFTWARE. Download it and install it with the defaults. On first start, create a free Bambu Lab account or sign in with a preexisting one.

Bind the Printer

THE P1S IS BOUND TO EXACTLY ONE ACCOUNT AT A TIME. With your laptop on the same network as the printer, open the Device tab in Bambu Studio, pick the P1S from the list of nearby printers, and confirm the request on the printer screen, on first login usually via a code.

The Printing

A TEST PART FOR YOUR FIRST PRINT is provided to the right. Ours is a Schutera Lab keyring tag: $60 \times 20 \times 2.4$ mm, a 4.5 mm hole that takes a standard split ring, and lettering and a border rim raised 0.6 mm, which is three layers at the standard layer height. `testprint.stl` lives next to this PDF and in the course repository, and may be shared and used freely. If you want to pick your own first print, choose something small, flat, and simple.

SLICE. In the Prepare tab choose Bambu Lab P1S with the 0.4 nozzle profile. Drag `testprint.stl` onto the plate. Choose the AMS slot you intend to print from and confirm the plate type is Textured PEI Plate. Then press Slice and read the preview. This will tell you about grams and job duration and is a good means for a sanity check.

DOWNLOAD. <https://bambulab.com/en/download/studio>

IF THE PRINTER IS ALREADY BOUND TO SOMEONE ELSE, it will not offer itself for binding. Log the previous user out. On the printer screen open the gear ⚙️, then Account, and log out. Then bind it.



Figure 1: The test part. The flat base sanity checks the first layer, the hole checks dimensions, the letters and the rim check small features.

DOWNLOAD. https://github.com/Quillstacks/LectureMaterial/raw/main/lecturenotes/notes_3dprinting/testprint.stl

BRINGING YOUR OWN PARTS LATER? Prefer a .3mf over an .stl: it carries units, orientation, and settings with it.

NO OUTSIDE FILAMENT. Print only with material provided by the lab.

NOZZLE PROFILES CAN CHANGE. We feature the 0.4 nozzle here because it allows us to print TPU (see p. ??).

CHECK THE PHYSICAL PLATE BEFORE YOU SEND. Clean, dry, seated flat on the magnets, no fingerprints where the part will land. Then send the job. The machine spends a few minutes heating and leveling before the first line of plastic goes down.

LET THE PLATE COOL BEFORE YOU TOUCH THE PART. PLA releases its grip as the plate cools; then flex the plate rather than prying the part. The magnetic lock-on feature allows you to take the plate out of the printer. Put the plate back, and close the door.

LEAVE THE MACHINE THE WAY YOU FOUND IT. If you are done for the day, make sure the lamp is off, the surrounding of the machine and its inside are tidy and clean. It is okay to turn off the printer entirely.

WATCH THE FIRST LAYER FINISH. before you walk away. If it is not down cleanly, stop the job there. These printers get hot and need attendance, so never walk away too far anyways. Weekend and overnight jobs need to be permitted by Lab Staff aka a Professor.

Scan the code and send a mail stating your project, faculty and what filament you used up (in g).

