SOP

Bambu Labs 3D Printer

OPERATION MANUAL

Training is required before using this equipment

Reservations are required to use this equipment



AVAILABLE MATERIALS

- PLA
- PETG
- ABS
- TPU

ONLY INNOVATION STUDIO MATERIAL MAY BE PRINTED ON THE BAMBU LABS PRINTERS

When your print is complete you must bring your print, with support, to the front desk and pay before you leave the studio

MAXIMUM PRINT AREA:

• 256mm x 256mm x 256mm (10in x 10in x 10in)

Launching Bambu Studio Software

Locate software on desktop or through search window



If prompted, complete the following steps:

Setup Wizard			×	Setup Wizard			×	
	Please select y	your login regi	on	We ki	ndly request your help to improve	e everyone's printing.		
	r lease select	your login regi		Come a	na Join our Customer Experience	Improvement Program		
	A	sia-Pacific China Europe rth America Others	Next	In the 3D Printing parameters and settin performance from the Studio to be smarter. Is from your error logs a collect any Personal D limitation names, add these terms and the si You may change y	community, we learn from each other's success gs. Bambu Studio follows the same principle an successes and failures of the vast number of pr py feeding them the real-world data. If you are v dn usage logs, which may include information or ata by which an individual can be identified dire resses, payment information, or phone numbers atement about Privacy Policy. your choice in preference anytime.	uses and failures to adjust our own sli d uses machine learning to improve ints by our users. We are training Ba willing, this service will access inform secribed in <u>Privacy Policy</u> . We will r cttly or indirectly, including without . By enabling this service, you agree	cing its mbu ation to to	
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				Setup Wizard			×	
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				Filament type:	🛛 Ali 🗳 Pla 🗳 Abs 🖉 TPU 🖉 PC	🖬 ASA 📓 PA-CF 📓 PA6-CF		
					PET-CF PETG PETG-CF PLA	-AERO 🗹 PLA-CF 🗹 PA 🗹	HIPS	
1	- 1	1			PPA-CF PPA-GF PPS PPS-C	F 🗹 PVA		
				Vendor:	🛛 All 🔽 Bambu Lab 🔽 Polymaker 🗹	eSUN 🛛 Generic 🔽 Overture		
				All Clear all				
Bambu Lab X1 Carbon	Bambu Lab X1	Bambu Lab X1E	Bambu Lab P1P	🖬 Bambu ABS	 Bambu PETG Basic 	Bambu PLA Matte	🗌 Bam	
0.4mm nozzle	0.2mm nozzle	 0.4mm nozzle 0.2mm nozzle 	0.4mm nozzle 0.2mm nozzle	🗆 Bambu ASA	Bambu PETG Translucent	🔲 Bambu PLA Metal	🗌 Bam	
0.6mm nozzle	0.6mm nozzle	0.6mm nozzle	0.6mm nozzle	Bambu PA-CF	Bambu PETG-CF	 Bambu PLA Silk 	🗹 Bam	
U.8mm nozzie	U 0.8mm nozzie	U.8mm nozzie	U.8mm nozzie	Bambu PA6-CF	🗌 Bambu PLA Aero	Bambu PLA Sparkle	🗹 Bam	
	\bigcirc	\bigcirc		Bambu PAHT-CF	Bambu PLA Basic	Bambu PLA Tough	🗆 Bam	
	- <u>1</u> -1			Bambu PC	Bambu PLA Glow	Bambu PLA-CF Reserved For DA (DFT)	Gen(
1 A				Bambu PEI-Cr				
			Confirm			Back	Finish	

- Login
 - Username: <u>innovationstudio@unl.edu</u>
 - Password: 2021Transformation



• Select yes for synchronization



Selecting the Correct Printer

- Select "Device" tab
- Select active printer on the left
- Select the printer you reserved under "My Device"

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🗐 👌 Bambu #3					£,	ſo	Q
Status	>						
MicroSD Card	>						
Update	>						
HMS	>						



IMPORT FILE

• Select File – Import – Import 3MF/STL/STEP...



Orient Part(s)

• Click part to select



- Click and drag on selected part to move around the build plate
- With part selected lay a flat face on the build plate





SELECTING PLATE & PRINTER TYPE

- In "Printer" drop down select the printer which matches your reservation
 - Bambu Labs X1E 0.4 nozzle
 OR
 - o Bambu Labs X1 Carbon 0.4 nozzle

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Select/Kellion	e printers(system)	DIESELS)					
Create printe	r	č					
3 Bambu PLA Basic							

• In Plate Type Dropdown, select "Textured PEI Plate"

YOU MUST SELECT TEXTURED PEI PLATE BEFORE SENDING FILE TO THE PRINTER



FILAMENT SELECTION

• Select AMS Button

~Tex	tured PEI	Plate	e	
	Flushing	g volu	mes) + - 🗃	©
TG	G	2	Bambu PLA Basic	G
S	Ľ	4	Bambu PLA Tough	Ľ
А	G	6	Bambu PLA Matte	Ľ
A Silk	G	8	Bambu Support W	C

• Select Resync

3	Sync filaments with AMS	×
5 7 9	Already did a synchronization, do you want to sync only changes or resync all?	
9	Process Global Objects Advance	

- Right click on a selected part, select change filament -> Filament ...
 - Select the filament corresponding to the desired filament on the "filament" tab on the left side of the screen

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1	Generic PLA	C	2	Bambu PL	A Basio	0	C
3	Generic ABS	C	4	Bambu PL	A Toug	gh	C
5	Generic PLA	C	6	Bambu PL	A Matt	e	C
7	Generic PLA Silk	C	8	Bambu Su	pport	w	C
9	Generic TPU	C					



- If multiple parts are selected, right click and choose "Set Filament for selected items" -> Filament ...
 - Select the filament(s) corresponding to the desired filament on the "filament" tab on the left side of the screen

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5 Generic PLA	G Bamb	ou PLA Matte	G
7 Generic PLA Silk	🖸 8 Bamb	ou Support W	G
9 Generic TPU	۲		

PRINT SETTINGS

- Select Layer Height from the preset dropdown
 - This adjusts settings for how detailed your model will be. It will use the same amount of material but take longer to print



- Select "Strength"
 - Adjust Wall Loops from between "2-5" this is the most material efficient way to increase strength





- Adjust "Sparse infill density" to support, stay above 10% to avoid
- Adjust "Sparse infill pattern" to aesthetics or strength preferences



increase strength & internal print defects

Wall loops: 5

change the internal shape for



Infill: 15% Gyroid







- Enable Support
- Type -> Normal(auto), or Tree(auto)
 - Tree support will "branch" instead of build straight up and down, avoiding the need to have support build on top of your part
- Set "Threshold angle" to 45 degrees
 - This adjusts the level of over hand that will print before being supported



NOTE: On high res/complex models, tree support may take significantly longer to slice

Process Global Objects	Advance	
↔ ✓ * 0.16mm Optimal @BBL	X1C	
Quality Strength <mark>Suppo</mark>	rt Others	
🛛 Support		
Enable support	⊖ ✓	
	normal(aut	
Threshold angle	⇒ 25	0
On build plate only		
((() Filament for Supports		
Support/raft base	Default	
Support/raft interface	Default	

> Brim type, select "Outer Brim

Only"

$\circ~$ This helps your print stick to the print bed







SENDING FILE TO PRINTER

• Select slice plate



• See material estimate and total print time

THE PROVIDED COST ESTIMATE IS NOT ACCURATE MULTIPLY THE FILAMENT WEIGHT BY OUR CURRENT MATERIAL COST

• Select "print plate"



• Select the printer you have reserved

- Check "Bed Leveling"
- Check "Enable AMS" unless printing with flexible TPU
- VERIFY THE BED IS CLEARED
- Click send



CLEAR PRINT BED

• Remove the build plate from the magnetic bed by grabbing the tab at the front and pulling up



- Lightly flex bed to separate print from build plate
- Peel off any remaining material left on the build plate
- If a new print is not sticking to the build plate, DO NOT USE GLUESTICK, wipe the bed down lightly with isopropyl alcohol

• Replace build plate making sure to line it up with the back stops and to not overlap with the gray tabs on the side



• The build plate should be placed so the tab that reads "PLA/ABS/PETG" is at the front

CHANGING FILAMENT

• Place filament spool in an empty slot on the AMS

- Once the filament has been inserted about an inch, the AMS unit will begin to pull the filament and spin the spool to read the chip.
 - It should automatically update the filament in the AMS tab on the printers screen

- If the filament does not automatically update, it can be manually updated by tapping the box on the screen that matches the corresponding AMS Slot
 - $\circ~$ Select "Bambu" on the first drop-down
 - $\circ~$ On the second drop-down choose the appropriate filament type
 - \circ Update the color to match the filament
- Select confirm

MULTICOLOR PRINTING

Colorize Your Model

• Bambu Studio provides multiple colorizing tools for various types of models.

Set filament for object/part

• Select AMS Button

~ Text	Flushing volumes + - E 2 Bambu PLA Basic 4 Bambu PLA Tough						
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TG	Ľ	2 Bambu PLA Basic	C				
S	G	4 Bambu PLA Tough	Ľ				
А	Ľ	6 Bambu PLA Matte	Ľ				
A Silk	G	8 Bambu Support W	Ľ				

• Select Resync

3	Sync filaments with AMS	×
5	Already did a synchronization, do you want to sync only changes or resync all?	
7		
9	Sync Resync Cancel	
9	Process Global Objects Advance 📜 🗄 🛠	

- Select filament for objects/parts in the object list on the left sidebar OR
- By right clicking as seen below

- Right click on a selected part, select change filament -> Filament ...
 - Select the filament corresponding to the desired filament on the "filament" tab on the left side of the screen

Paint on an Object

 Select an object, then select the "Color Painting" tool or by clicking the "N" on the keyboard

• Use the provided tools and different colored filaments to "Paint" the color on the model as seen above

NOTE: each time in a layer the filament changes color it must purge extra material and take extra time.

• YOU MUST TAKE A PICTURE OF THE PRINT ESTIMATE TO SHOW NIS STAFF AT CHECKOUT

- $\circ~$ This accounts for filament waste in multicolor printing
- Note: in the above estimate, wasted material is 4 times the amount of printed material