SURESH ANGADI EDUCATION FOUNDATION'S
ANGADI INSTITUTE OF TECHNOLOGY & MANAGEMENT
Savagaon Road, Belagavi – 590 009.
(Approved by AICTE, New Delhi &Affiliated to Visvesvaraya Technological University, Belagavi)
Accredited by NBA / NAAC

Department of Mechanical Engineering & Department of Robotics and Automation Engineering

Centre of Excellence in 3D Printing & Research

From idea to object, layer by layer.

DESIGN • PROTOTYPE • PRINT • INNOVATE

At a Glance

4	256³ mm	7	86 m²
FDM 3D PRINTERS	BUILD VOLUME (BAMBU LAB)	FILAMENT TYPES	CENTRE AREA

About the Centre

The Centre of Excellence in 3D Printing & Research gives the students and faculty of Angadi Institute of Technology and Management (AITM), Belagavi, a place to design, print, test and improve. It is run jointly by the Department of Mechanical Engineering and the Department of Robotics and Automation Engineering, and was inaugurated on 14th November 2026.

Mechanical Engineering students use the Centre for design and manufacturing practice. Robotics and Automation students use it to make chassis, grippers, sensor mounts and enclosures. Faculty uses it for research and teaching models. Any AITM student can learn to use it, with the lab in-charge as guide.

Our three principles

- **Learn by making.** A part in the hand teaches more than a drawing on the screen.
- **Open to all.** Any AITM student can learn, with the lab in-charge as guide.
- **Safe and shared.** The printers are expensive and hot; we use them with care and keep them in good order.

Objectives

- Give every student hands-on experience of additive manufacturing alongside the curriculum.
- Support final-year projects, mini-projects and department competitions with fast prototyping.
- Provide a base for faculty and student research in design, materials and rapid manufacturing.
- Offer prototyping help to local industry and neighboring institutions.

Campus: Savagaon Road, Belagavi – 590 009. ☎: 0831 – 2438100, 2438123
Web Site: www.aitmbgm.ac.in, E-mail: mech.hod@aitmgbm.ac.in

What the Centre Does

Area	What it covers
Learn	Hands-on practice in the CAD-to-print workflow, slicing in Bambu Studio and safe printer use
Build	Prototypes for final-year projects, mini-projects, competitions and class demonstrations
Research	Test specimens, custom fixtures, print-parameter and material studies
Serve	Prototyping support for local industry and neighbouring institutions, on request

Equipment

Printer	Type	Process	Installed
Bambu Lab P1S	Enclosed	FDM	August 2026
Bambu Lab A1	Open frame	FDM	August 2026
Creality Ender-V3	Open frame	FDM	August 2022
Tequed Lab 3D printer	Open frame	FDM	October 2019 (sponsored)

Slicing software: Bambu Studio.

Bambu Lab P1S and A1 at a glance

Specification	Bambu Lab P1S	Bambu Lab A1
Enclosure	Fully enclosed, with carbon filter	Open frame
Build volume	256 × 256 × 256 mm	256 × 256 × 256 mm
Nozzle	0.4 mm stainless steel	0.4 mm stainless steel
Max nozzle / bed temperature	300 °C / 100 °C	300 °C / 100 °C
Max speed	500 mm/s	500 mm/s
Filaments (1.75 mm)	PLA, PETG, ABS, ASA, PET, PVA, TPU	Best with PLA, PETG, TPU, PVA
Multi-colour	Up to 16 colours with AMS	AMS lite, 4 spools (A1 Combo)
Connectivity	Wi-Fi, Bluetooth, SD card	Wi-Fi, micro SD card, touchscreen
Best for	ABS and ASA parts, heat or UV resistance, parts that warp in open air, long multi-colour jobs	Quick PLA, PETG and TPU prototypes, multi-colour models, teaching and demonstrations

Materials

Filament	P1S	A1	Typical use

Filament	P1S	A1	Typical use
PLA	Yes	Yes	Concept models, display parts, fit checks, multi-colour prints
PETG	Yes	Yes	Tougher functional parts, enclosures, fixtures
TPU	Yes	Yes	Flexible parts: gaskets, grips, bumpers
PVA	Yes	Yes	Water-soluble support for complex geometry
ABS	Yes	No	Heat-resistant parts, post-processing by sanding
ASA	Yes	No	Outdoor parts needing UV resistance
PET	Yes	No	Specialist use; confirm with the lab in-charge

From Idea to Finished Part

Every part made in the Centre follows the same loop: model, convert to code, print, finish, test and improve the design. Students prepare each job in Bambu Studio in six steps: prepare the file, select the printer and filament, orient the part, set layer height, walls, infill and supports, slice and check the preview, then print and watch the first layer.

Services and Access

To be confirmed by the conveners before publishing; the catalogue marks these services as proposed.

Service	Who it serves	What you get
Curriculum practice	Mechanical and Robotics & Automation students	Supervised printing for lab sessions and assignments
Project prototyping	Final-year and mini-project teams	Printed enclosures, brackets, gears, chassis and fixtures
Research support	Faculty and research scholars	Test specimens, custom fixtures, design iteration
Training	Any AITM student	Introduction to Bambu Studio and safe printer use
External prototyping	Industry and other institutions	Quoted prints on request

How to request a print

- **Submit:** send your model file and filament choice to the lab coordinator.
- **Slot:** receive a printer and a time slot.
- **Slice:** prepare and slice the file in Bambu Studio with the lab in-charge.
- **Print:** the lab in-charge starts the print and checks the first layer.

- **Collect:** remove the part after the bed has cooled and log the job.

Training programme

Proposed; dates to be announced by the conveners.

Session	Topic	Duration
1	Introduction to additive manufacturing and the Centre	1 hour
2	CAD export and file preparation	1 hours
3	Bambu Studio: presets, orientation and supports	2 hours
4	Hands-on printing on the P1S and A1; safety and maintenance	2 hours
5	Mini-project: design, slice and print a part	4 hours

Applications and Project Idea

Area	Example projects
Mechanical design	Gears, couplings, jigs and fixtures, scaled assembly models, topology-optimised brackets
Robotics and automation	Robot chassis, gripper fingers, sensor mounts, enclosures for controllers, cable guides
Manufacturing	Low-volume custom tools, assembly aids, lightweight lattice parts
Fluid and thermal	Flow-visualisation models, manifolds, heat-sink and duct prototypes
Education	Teaching models of mechanisms, cutaway sections, engineering drawing models
Research	Test specimens, material comparison of PLA, PETG and ABS, print-parameter studies

Lab Rules and Safety

- Use the printers only with the lab in-charge's permission.
- The nozzle (up to 300 °C) and bed (up to 100 °C) are hot. Do not touch them.
- Use approved filaments only. Ask the lab in-charge before using any other material.
- Check the first layer before you leave, and report any fault to the lab in-charge.
- Remove parts only after the bed has cooled, and keep the bench clean after use.
- **P1S (enclosed):** keep the door closed while printing, keep the carbon filter fitted and the lab ventilated, especially for ABS and ASA.
- **A1 (open frame):** keep hands, hair and cables away from the moving bed; avoid drafts near the printer.

Inauguration

The Centre was inaugurated on **14 November 2026 at 11:00 AM**, together with the inaugural function of the Association of Mechanical Engineering, AGIRA 2K26, at AITM, Belagavi.

Chief Patron	Smt. Mangal Suresh Angadi, Chairman, Suresh Angadi Education Foundation (SAEF)
President	Dr. Spoorti R. Patil, Director, SAEF
Chief Guest	Mr. Manohar Kutre, Proprietor, MEISTER FLUIDTECH, Belagavi
Guests of Honour	Dr. Anand B. Deshpande, Principal & Director, AITM, Belagavi; Shri. Raju P. Joshi, Administrator, SAEF, Belagavi

Our Team

Name	Designation	Role
Dr. M. K. Patil	HOD, Mechanical Engineering	Convenor
Dr. Pooja V. Anagolkar	HOD, Robotics and Automation Engineering	Convenor
Dr. Aravind Muddebihal	Associate Professor, Robotics and Automation Engineering	Centre Coordinator
Mr. Kiran Pammar	Instructor	Centre Technician

Gallery

Use photographs only. The sample prints on page 22 of the catalogue are illustrative renders, not prints made in the Centre.

Image	Suggested caption	Alt text
Catalogue cover photo	A Bambu Lab printer at work in the Centre	Bambu Lab 3D printer printing a small green boat
Catalogue page 15	Bambu Lab P1S in the Centre	Bambu Lab P1S enclosed 3D printer
Catalogue page 16	Bambu Lab A1 in the Centre	Bambu Lab A1 open-frame 3D printer
Catalogue page 14	The 3D printing iteration process	Diagram of the 3D printing loop from modelling to testing
[Inauguration photos]	[e.g. Lamp lighting with Chief Guest and dignitaries]	[Add alt text]
[Lab photos]	[Students at work in the Centre]	[Add alt text]

Contact

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Departments	Mechanical Engineering; Robotics and Automation Engineering
Coordinator Details	Dr. Aravind Muddebihal, Associate Professor, Dept R&AE Contact No: 9986573423

Homepage news item

Centre of Excellence in 3D Printing & Research inaugurated at AITM. The Departments of Mechanical Engineering and Robotics and Automation Engineering inaugurated the Centre on 14 November 2026. Mr. Manohar Kutre, Proprietor, MEISTER FLUIDTECH, Belagavi, was the Chief Guest, and Dr. Spoorti R. Patil, Director, SAEF, presided. The Centre has Bambu Lab P1S and A1 printers and offers training, project prototyping and research support.

Notes before publishing

1. Laboratory area. The catalogue says 66 m² on page 13 and 86 m² on page 14. Enter the correct figure in the "At a Glance" box (highlighted).

2. Number of printers. The catalogue text says "two Bambu Lab printers", but its equipment table lists four printers, and the "Centre at a glance" box says 4. This page uses four, and names the P1S and A1 as the new printers.

3. Filament types. The "at a glance" box says 5, but the materials guide lists 7 (PLA, PETG, TPU, PVA, ABS, ASA, PET). This page uses 7.

4. Email. The catalogue gives info@aitmbgm.in, but the AITM website uses info@aitmbgm.ac.in. This page uses the website address.

5. Name and address spellings. The catalogue has both "Angolkar" and "Anagolkar" for the R&A HOD, and "Dr. Suresh C. Angadi Marg" in some places. This page uses "Anagolkar" and "Dr. Suresh Angadi Marg".

6. Cost figures left out. I did not publish the investment figures: the catalogue shows ₹58,780 and ₹40,375 for the P1S and A1 in one table, and ₹61,874 and ₹42,500 in another.

7. Services and training. The catalogue marks services, the print-request workflow and the training programme as proposed. Confirm them with the conveners before going live.

8. Catalogue link. Upload the catalogue PDF to the website and link it from the "Download" button. Before uploading, correct the items above in the catalogue itself.