All India Council for Technical Education

B.S. Abdur Rahman®
Crescent
Institute of Science & Technology
Deemed to be University u/s 3 of the UGC Act, 1956

ABOUT THE INSTITUTION

Nestled in the serene greenery of Tambaram, Chennai, B.S. Abdur Rahman Crescent Institute of Science and Technology is a premier institution dedicated to academic excellence, since 1984. Through our long history of 41 years of excellence, the Institution has offered access to a wide range of academic opportunities. With various Undergraduate, Postgraduate and Ph.D. programmes grouped under 12 different Schools, this institution is a stalwart in higher education with promising Quality, Security and Placement. We welcome students from all countries, and our educational programmes are designed to equip the learners with virtual knowledge that helps them to achieve what they want to be and go where they want to go in the ladder of success.

This institution is an intellectual destination that challenges conventional thinking and stimulates passion to redefine learning. The distinctive teaching at this institution makes the students and scholars compete with themselves and each other. Apart from providing top-notch education, our green campus and well-planned student-life are solely dedicated to making students utilize the ambiance to the fullest. Through our wide array of educational programmes and unique clubs to foster student development activities, we provide opportunities and experiences that build a community that helps you grow personally and professionally and create a place that you can call home now and throughout your life.

BSACIST AICTE IDEA LAB

AICTE has launched a scheme to establishAICTE-IDEA (Idea Development, Evaluation & Application) Labs in its approved institutions to encourage students to apply Science, Technology, Engineering, and Mathematics(STEM) fundamentals for enhancing hands-on experience and learning by doing. The AllIndia Council for Technical Education (AICTE) announced the names of 49 institutions that were selected forestablishing AICTE IDEA (Idea Development, Evaluation & Application) Lab in their campus. IDEA Labsare co-funded by AICTE and industry/institutions under the Scheme.

AICTE has launched a scheme to establish AICTE-IDEA (Idea Development, Evaluation & Application) Labs in its approved institutions to encourage students to apply STEM fundamentals for enhancing hands-on experience and learning-by-doing. As part of this initiative, B.S. Abdur Rahman Crescent Institute of Science & Technology has been selected among leading institutions across India to set up the AICTE-IDEA Lab on campus. A total grant of ₹1.23 Crore has been sanctioned for this project, of which ₹47.7 Lakhs is provided by AICTE and the remaining ₹75.30 Lakhs is contributed by the management of Crescent Institute. This IDEA Lab serves as a common innovation facility aimed at making engineering graduates more imaginative, creative and industry-ready, while equipping them with 21st-century skills such as critical thinking, problem-solving, research, collaboration, communication and lifelong learning. The Lab empowers students and faculty to “engage, explore, experience, express and excel,” supporting multidisciplinary research, practical project development and startup-driven innovation. It will play a significant role in strengthening the innovation ecosystem of the institution by enabling faculty to mentor students in developing real-world solutions, patentable products and entrepreneurship-focused outcomes.

INFRASTRUCTURE FACILITIES

ELECTRONIC PRODUCT DESIGN LAB

The Electronic Product Design Lab, established under the AICTE IDEA Lab initiative, is a dedicated facility designed to promote innovation, experiential learning, and entrepreneurship in the field of electronics and embedded systems. This lab enables students, researchers, and innovators to transform ideas into functional prototypes by providing modern tools and a project-centered learning environment. It focuses on the complete product development cycle—design, development, testing, and validation—bridging the gap between theoretical knowledge and real-world technological solutions.

Components and Accessories:
A comprehensive inventory of passive and active components, connectors, cables, breadboards, and PCBs

Equipments:

- **Basic Instruments:**

Oscilloscopes, digital multimeters, function generators, regulated power supplies, and LCR meters for fundamental circuit testing and measurements.

- **Advanced Instruments:**

Mixed-signal oscilloscopes, Digital Signal Oscilloscopes, and signal generators for analyzing high-performance electronic systems and communication circuits.

- **Prototyping Tools:**

Soldering and rework stations, **2 Layers PCB milling** and drilling machines, rapid prototyping equipment, and supporting tools for assembling and testing printed circuit boards.

ADDITIVE MANUFACTURING LAB

The Additive Manufacturing Lab is a cutting-edge facility designed to support rapid prototyping and advanced manufacturing through 3D printing technologies. It enables students and innovators to convert digital CAD models into accurate physical components, fostering creativity, experimentation, and iterative product development. The lab plays a critical role in accelerating design cycles, reducing material waste, and achieving complex geometries that are difficult to produce with traditional methods.

Equipments:

3D Printers – FDM Technology:
For printing polymer components using materials such as PLA, ABS, and PETG.

A wide variety of 3D printing consumables and support items including PLA, ABS, PETG filament spools, adhesives, nozzles, build plate surfaces needed for assembly and functional prototyping.

Software Tools:

Design and Slicing Software:
Fusion 360, Bambu for modeling, slicing, and print optimization

SUBTRACTIVE MANUFACTURING

The Mechanical Design & Prototyping Lab under the AICTE IDEA Lab initiative is a state-of-the-art workspace focused on developing mechanical components and product prototypes. It empowers students and innovators to explore concepts of design, manufacturing, and materials through hands-on experimentation. The lab supports a full product realization workflow -3D modeling, simulation, fabrication, and performance testing, enabling the transformation of innovative ideas into reliable physical models and working prototypes. This facility strengthens practical engineering skills and encourages creativity aligned with modern industry standards.

Equipments:

- **Basic Machines:**

Drilling machines, bench grinders, cutting tools, power saws, and fitting tools for fundamental machining operations.

- **Advanced Machines:**

CNC milling machines, CNC lathe, and precision measurement instruments such as digital calipers, micrometers.

- **Rapid Prototyping Tools:**

3D printers (FDM/SLA), laser cutters to enable quick iteration and testing of mechanical designs.

Components and Accessories:

The lab maintains a diverse inventory of fabrication materials and consumables, including acrylic, MDF, plywood and composite sheets for CNC router and laser cutting operations, as well as PLA/ABS filaments and resins for 3D printing. Essential tooling such as cutting bits, drill bits, clamps, fixtures, and sacrificial boards are provided, along with fasteners, bearings, and structural hardware needed for assembling and finishing mechanical prototypes.

LIST OF EQUIPMENTS

ACRYLIC LASER CUTTER

Laser cutting acrylic requires securing material, using proper ventilation for harmful fumes, and setting high power with slower speeds for smooth,

Model Name	SPL07
Machine Type	CLOSED
Capacity	INDUSTRIAL
Cutting Speed	300 MM/S
Cutting Material	Acrylic, MDF

flame-polished edges. Use cast acrylic for superior,
cleaner cuts, and keep protective film on to prevent scratches. Essential settings include 100% power and 20–30 PSI air assist.

VINYL CUTTER

A vinyl cutter is a machine used to cut designs from vinyl material. To use it, load the vinyl into the cutter, install and adjust the blade so it only cuts the vinyl layer, and connect the machine to a computer with the required software. Create or import your design, set the cutting speed and pressure, and send the job to the cutter. After cutting, remove the vinyl, weed out the extra material, and apply transfer tape to place the design onto the desired surface

Model Name	JK 721 Vinyl Cutter
Machine Type	Vinyl Cutting Plotter
Capacity	630 mm
Cutting Speed	Up to 800 mm/sec
Cutting Material	Self-adhesive vinyl film

3D PRINTER

Bambu Lab X1 3D printer is a CoreXY-based FDM (Fused Deposition Modeling) 3D printer designed for high-speed, high-quality printing with advanced automation and smart features. It integrates modern hardware and AI-style automated calibration to make 3D printing more reliable and easier for both beginners and experienced users alike.

3D SCANNER

Creality offers a range of handheld and portable 3D scanners designed to digitize real-world objects into accurate 3D models. These scanners use structured light and/or laser technologies to capture detailed geometry and surface textures, and they output standard 3D file formats like STL, OBJ, and PLY for use in modeling, reverse engineering, inspection, or 3D printing workflows.

Type	Handheld 3D Scanner
Accuracy	Up to 0.02 mm (laser mode)
Output Formats	OBJ / STL / PLY
Connectivity	USB-C / USB 3.0
OS Support	Windows & macOS

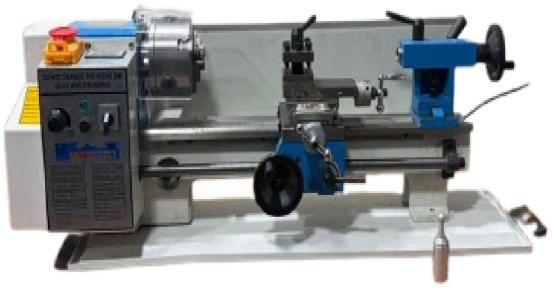
CNC ROUTER

A CNC (Computer Numerical Control) Router is a computer-controlled cutting machine used to precisely cut, shape, drill, and engrave materials by following digital design files. It operates by moving a rotating cutting tool across multiple axes (typically X, Y, and Z) to remove material from a workpiece, creating parts with high accuracy and repeatability. CNC routers are widely used in manufacturing, woodworking, prototyping, sign-making, furniture production, aerospace, and plastic fabrication. They allow complex shapes and patterns to be produced quickly with minimal manual intervention.

X-Y Axis Working Area	1300 x 2500 mm
Model	AX1325
Job Material	Wood, Acrylic,Aluminum
Driven Motor	Servo Motor

MINI DESKTOP LATHE CUM MILLING

ML180 Mini Desktop Lathe Cum Milling Machine is a compact multifunction machine designed for small-scale workshops, hobbyists, and precision prototyping. It combines the capabilities of a metal lathe and a milling machine in a single unit, allowing turning, facing, drilling, threading, and light milling operations on small workpieces. Its desktop footprint and ease of use make it ideal for model makers, schools, and DIY fabricators.This machine provides a versatile and affordable solution for machining small metal parts (such as brass, aluminum, mild steel) and plastics with adequate precision and reliability for non-industrial applications.



Model No	ML180
Spindle Speed	0–2500 RPM (lathe) / 0–3000 RPM (milling)
Motor Power	250 – 500 W
Cutting Material	Soft metals (aluminum, brass), plastics, wood, mild steel (light duty)

DRILLING M/C 1 HP MOTOR

1 HPMC drilling machine is a bench-type industrial/ workshop drilling machine powered by a 1 HP electric motor. It is designed for straight drilling, reaming, countersinking, and tapping operations on various materials like mild steel, cast iron, wood, and plastics. This machine is suitable for small to medium workshop use, providing reliable performance and ease of operation.

Model NO	I HPMC
Machine Type	Bench / Pillar Drilling Machine
Max Torque	11 Nm
Drill Depth	160 mm
Make	RMT

HANDHELD HIGH SPEED DRILLING

Bosch GSB 500 RE is a **corded handheld impact drill** designed for versatile drilling tasks in **wood, metal, masonry, and concrete**. It's compact, lightweight and suitable for DIY, maintenance work, general workshop use, and construction tasks. While its no-load speed isn't 15 000 RPM, it provides effective drilling and hammer-impact capability for light to medium materials

Model NO	Bosch GSB 500 RE
Machine Type	Handheld Corded Impact Drill / Drilling Machine
Power Output	250 W
Chuck	160 mm
Make	RMT

BENCHTOP GRINDER MACHINE

Benchtop Grinder Machine, model STGB3715 (373 W) by Stanley, is a compact and powerful workshop tool designed for metal grinding operations. The machine is widely used for sharpening cutting tools, removing burrs, and smoothing rough metal surfaces. It is equipped with a robust 373 W motor that provides stable and reliable performance. The benchtop design ensures easy installation and vibration-free operation. This machine is suitable for workshops, laboratories, maintenance departments, and DIY applications.

Model NO	STGB3715 373W
Material	Plastic, Metal
No Load speed	3450 RPM
Dimensions	27W X 4W X 15H CM
Power Source	Corded

SOLDER STATION

POWER TOOLS

WOOD LATHE

Wood Lathe is a compact and versatile woodworking machine designed for turning wooden workpieces. It allows craftsmen to shape, sand, and finish wood into cylindrical forms such as table legs, bowls, and spindles. The machine features a stable bed and adjustable tool rest to support precision and control during operation. Its user-friendly design makes it suitable for hobbyists, small workshops, and furniture makers. This wood lathe is ideal for detailed woodworking tasks and producing smooth, consistent results

Model	MiniWL
Voltage	220 V
Feed Rate	7.5 meter/min
Phase	single

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PORTABLE WELDING MACHINE

Portable Welding Machine Handy Arc MIG 200i is a multi-process inverter-based welding machine from ESAB, designed for versatile welding jobs in fabrication shops, maintenance, construction, and industrial applications. It supports MIG/MAG welding (with gas) and MMA (Stick) welding, utilizing IGBT inverter technology for stable arc performance, high efficiency, and lighter weight. This machine is portable, robust, and user-friendly, making it suitable for professional welders, technicians, and general metalworking tasks where mobility and performance are both needed.

Model No	Handy Arc Mig 200i
Make	ESAB
Welding Processes	MIG/MAG (GMAW) & MMA (Stick)

MIXED SIGNAL OSCILLOSCOPE

Mixed signal oscilloscope (MSO) from the *InfiniiVision 3000G X-Series* designed for professional electronic test and measurement work. It combines traditional oscilloscope functionality with logic analysis so you can observe both analog and digital signals simultaneously, making it ideal for embedded system debugging, digital-analog mixed-signal design, and general electronics troubleshooting

Machine Type	Mixed Signal Oscilloscope (MSO)
Digital Channels	16 digital channels (logic)
Waveform Memory Depth	Up to 4 Mpts
Trigger Types	Edge, zone touch trigger, pulse width, runt, and more

PCB MILLING

PCBMate 300W is a compact desktop PCB milling machine from Enthutech, designed for rapid prototyping and precision fabrication of printed circuit boards (PCBs) without the need for chemical etching. It uses a rotating milling cutter to mechanically remove copper from substrate material to create custom circuit patterns. This makes it ideal for electronics workshops, research labs, educational institutions, and hobbyists working on prototype PCBs.

Model	PCBMATE 300W
Make	Enthutech
Motor Power	300 W spindle motor
Software	Compatible with common CAM software for PCB milling

VARIABLE POWER SUPPLY

SIGNAL GENERATOR

HACKSAW

BENCHTOP MULTIMETER

PCB POWER DRILLING

CORDLESS DRILLER

JIGSAW MACHINE

POWER CIRCULAR SAW

PIPE VICE

BALL PEEN HAMMER

STEEL SHAFT CLAW HAMMER

DREMEL CORDLESS ROTARY

NYLON MALLET

SCROLL SAW

MOTO SAW

POWER ROUTER

IMPACT DRILL

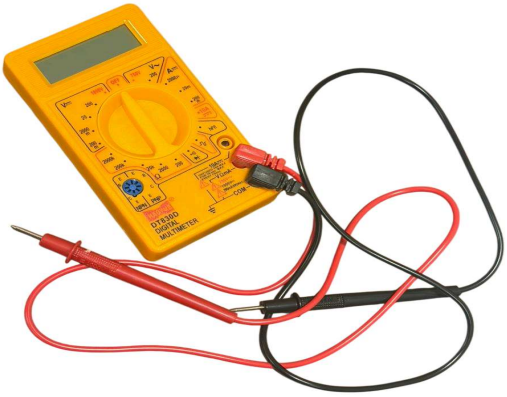
TIN CUTTER WITH SPRING

HOT AIR GUN

AIR COMPRESSOR

REFLOW OVEN

MULTIMETER



BENCH VICE