

ADHIYAMAAN COLLEGE OF ENGINEERING (AUTONOMOUS), HOSUR – 635109			
(Approved by AICTE, New Delhi Affiliated to Anna University, Chennai Accredited by NBA & NAAC with 'A' Grade)			
AICTE IDEA LAB TECHNICAL SPECIFICATIONS			
1. MANDATORY EQUIPMENTS			
S.NO.	COMPONENTS	SPECIFICATIONS	QTY
1	Laser Cutter	100 watts size - Marking Area 1200mm*900mm + laser cutting software +Water Cooling Chiller	1
2	Vinyl Cutter	Cutting Plotter 800G Size 770*310*265 mm Max Force-800 g + software)	1
3	3D Printer	256 x 256 x 256 mm or better (ABS ASA Carbon/Glass Fiber Reinforced Polymer PA PC PET PETG PLA PVA TPU)"	1
4	3D Scanner	Scanning Mode : Blue Light (Blue 7-line laser) & NIR Accuracy : Metrology Grade Accuracy upto 0.02mm High Speed upto 60fds Capture Range (mm) : 250 x 150 x 300 (Blue Light mode) 900 x 550 x 1000 (NIR Mode) 3D camera resolution:1920 x 1200 Full HD	1
5	CNC Router	CNC Router 4*3 Stepper based Working Area mm (X.Y, Z) : 1200 x 900 x 300 Cutting Speed mm/m: XY : 15000 Z:8000	1

6	Mini Desktop Lathe cum Milling	Swing over bed : 100 mm or more Motor output power : 230 W Spindle Speed Range 100-1000 +-10%RPM	1
7	Drilling M/c 1 HP Motor	No Load Speed: 0 - 630 rpm Motor Power: 1 HP Max Torque: 11 Nm	1
8	Handheld High Speed Drilling.	Rated input power : 450 W	1
9	Benchtop Grinder Machine	373W or better	1
10	Solder stations	Watts 600 watts all combined Iron 60watts 480°C max.	5
11	Desoldering M/c	• Power Source: Corded Electric	10
12	Advanced motorized Sewing Machine		1
13	Wood Lathe	Wood lathe machine with chuck and accessories V 200 v 580 W Speed 5000 RPM 680*93*140 mm 6.5 kg	1
14	Power Tools	10 RE Professional Corded-Electric Drill Tool Kit MS & Plastic 100 Pcs	1
15	Portable Welding M/c	200i - MIG/MAG/MMA IGBT Inverter based Welding Machine	1
16	Refrigerator	1 184 L 3 Star Direct-Cool Single Door Refrigerator with stabilizer	1
17	Normal and Microwave Oven	20 L Stainless steel cavity Solo Microwave Oven	1
18	Magnifying Glass with Stand	Power adapter: Input 110-240V50/60Hz	1
19	Digital Microscope	S2 USB 8 Led 1X-500X Digital Microscope Endoscope Magnifier Video Camera Real 2Mp	1
20	Mixed Signal Oscilloscope	HD100MHz 4 channels 2GSa/s 12-bit high resolution 50Mptsmemory depth mixed signal oscilloscope; 7" touch screena)	1

21	Digital Storage Oscilloscope	Digital Storage Oscilloscope 100MHZ 2 Channel 2Gsa/s 12-bit high resolution with 7" inch touch screen display:100 MHz; or Better	1
22	Signal Generator	Dual Channel Function/Arbitrary Waveform Generator 60MHZ: 60MHz; 2 channels; or better No china/pakistan brands	1
23	Variable Power Supply	Series Programmable DC Power Supplies 3 independent high precision outputs: two 32 V /3.2 A one 2.5 V / 3.3 V / & 5 V / 3.2 A total 220 W power No china/pakistan brands	1
24	Benchtop Multimeter	4½-digit; 150rdgs / s measurement speed; or better No china/pakistan brands	1
25	Projector	4000 Lumens High Brightness, 20000:1 High Contrast Ratio, Dual HDMI, USB-A, Upto 15000 Hrs Extra-Long Lamp Life, 10 W Speaker, 3D Capable	1
26	Heavy Duty Laser Printer	All-in-One LaserJet Pro Printer with Duplex & Wi-Fi W1A24A	1
27	PCB Milling Machine	PCB Prototyping Machine-manual tool change(MTC) 1.2 KW and 60000 RPM or better Machine dimensions :700 X 350 X 270 mm PCB Cabinet with Hand held remote Desktop Computer, CPU, Mouse and Keyboard Vacuum Cleaner Single Side Copper Clad – 5 No's Double Side Copper Clad – 5 No's	1
28	Smart Board	Interactive Flat Panel 75" Version: Android 14 RAM: 8GB ROM: 128GB	1

29	Computer Workstation in networking	Workstation 32GB (1x32GB) i7 1TB SSD NVIDIA RTX 3050 - 4GB Win 11 Pro 22 INCH FHD MNTR TFT Mouse and Keyboard or better	5.00
2. MANDATORY CONSUMABLES			
S.NO.	COMPONENTS	SPECIFICATIONS	QTY
1	Vacuum Cleaner	1400Watts Dry Vacuuming 24 kPa Suction Power 1.5L Dust Collector	1
2	Hot Air Gun- 5 Nos.		1
3	Measuring Equipment [Vernier calliper (0-200/0.01) Vernier height gauge(0-1000mm) MiCrOmeter 0-50 50-100/0.001 inside and outside)] Metal Scale etc		1
4	Fire Extinguisher	6 kg	1
5	First Aid Box		1
6	Digital Multimeter		5
7	Clothes Iron		5
8	Electronic Component Repository (LCR Meter Variac		1
9	3D printer Filament	PLA+ 3D Printer Filament 1.75mm Dimensional Accuracy +/- 0.03 mm 1 kg Spool (2.2 lbs)	2

10	Acrylic Sheets	Model: Acrylic Sheets 8 x 4 Ft ACRYLIC SHEETS 2MM ACRYLIC SHEETS 3MM ACRYLIC SHEETS 4MM ACRYLIC SHEETS 5MM	8
11	Foam Sheets	Model: Foam Sheets 8 x 4 Ft FOAM SHEETS 8MM FOAM SHEETS 10MM FOAM SHEETS 12MM FOAM SHEETS 15MM	8
12	Ply Boards	Model: Ply Boards 8 x 4 Ft PLY BOARDS 8MM PLY BOARDS 12MM PLY BOARDS	8
13	Nylon Rods	Model: Nylon Rods 12 mm 15 mm 18 mm 25 mm	20
14	Nuts	Model: Nuts 3mm 4mm 5mm 6mm 8mm 10mm 12mm	700
15	Bolts	Model: Bolts 3mm 4mm 5mm 6mm 8mm 10mm 12mm	700
16	Screws	Model: Screws 3mm 4mm 5mm	300
17	Washers	Model: Washers 3mm 4mm 5mm 6mm 8mm 10mm 12mm	700
18	Studs	Model: Studs 6mm 8mm	10
19	Nails	Model: Nails 1" 2" 3"	300
20	Adhesives		30
21	2Way Tapes		20
22	PVC Pipes		5
23	Aluminum Channels		10
24	PCB Drill Bits		60
25	Drill Bits		80
26	Drill Bits		15
27	Carpentry Boring Bits		1
28	Electronic Active and Passive components		10
29	USB Cable		10
30	Radium Cutter knives		10
31	Glue Sticks		50
32	Hack Saw Blades		10
33	9V Battery Snaps		20

34	LAN Cables		5
35	9V Batteries		20

3. MANDATORY TOOLS- MECHANICAL

S.NO.	COMPONENTS	SPECIFICATIONS	QTY
1	Hacksaw		5
2	Micro Chisel Set		3
3	Pliers		3
4	Manual PCB Drilling Machine	PCb Manually Drilling machine With 0.3 mm to 1.6 mm	3
5	PCB power Drilling Machine		3
6	Cordless Drilling Machines		2
7	Jigsaw Machines		2
8	Power Circular Saw		2
9	Files Set	Inditrust 6 pcs Premium Assorted File Set with Handle (6 inch)	2
10	File Handles		1
11	Needle Files		2
12	Pipe Vice		2
13	Mini HackSaw		5
14	Ball Peen Hammer		5

15	Steel Shaft Claw Hammer		5
16	Nylon Mallet		5
17	Rubber Mallet		5
18	Allen Key Set		3
19	multi tool kit		2
20	Double ended spanner sets		2
21	12 Piece Open ended Spanner Set		2
22	Belt and Disc Sanding Machine		1
23	Scroll Saw Machine		1
24	Tool Wall covering Perforator		3
25	Moto Saw		1
26	Bench Grinding Machine	Powerful 373 watts motor Accepts cotton buffing and wire brush wheels	1
27	Power Return Measuring Tape		5
28	Tri Square 8"		5
29	Stainless Steel Rule		5
30	Digital Vernier Caliper	Power Source: Battery Powered Resolution: 0.01 inch Included Components: 1	5
31	Spirit Level		5
32	Dremel Cordless Rotary Tool		1

33	GPIO Power Router		1
34	Sewing Machine		1
35	Impact Drill		3
36	Ratchet Set		2
37	Router Bit Starter kit		1
38	Scroll Saw		1
4. MANDATORY TOOLS-ELECTRICAL			
S.NO.	COMPONENTS	SPECIFICATIONS	QTY
1	Hot Air Blower With Soldering Iron		5
2	Tin Cutter with Spring		10
3	Centrifugal Blower		1
4	Screwdriver Sets		2
5	Cutting Mats		5
6	Vacuum Cleaner		2
7	Hot Air Gun-		5
8	Micrometer -		5

9	Glue Gun		5
10	Air Compressor		1
11	Allen Set Wi ench		5
12	Tongue and Groove Pliers		5
13	Non contact voltage tester		5
14	Wire Stripper		5
15	Fish Tape		2
16	Flashlights		2
17	DC Regulated Power Supply		3
18	Solder Wick		10
19	Filament Dehydrator		1
20	Reflow Oven	• No. of waves: 7 • Heating type: Infrared IC Heater • Maximum width of PCB board: 300×320 mm • Power supply: AC110V/ 50Hz AC220V /60Hz	1
21	Glass Cutter		1
22	Gypsum (10kg		10
23	Digital Muttimeter		5
24	Clothes Iron		5
25	Oscilloscope	Digital Storage Oscilloscope 100 MHZ	4

5. NETWORKING TOOLS			
S.NO.	COMPONENTS	SPECIFICATIONS	QTY
1	C-Clamp	Carbon Steel Powder Coated	10
2	Ratchet clamp 8 inches/200mm	Ratchet ClampMAF Quick BAR CLAMP 250MM 10INCH	10
3	Baby Vice 60 mm	Baby Vice -Bolt Base 60mm 2 1/2" Precision Machined Unbreakable Steel Powder Coated	5
4	Bench vices	• Heavy Duty Bench Vice • Pre Drilled Holes to Bolt Down To Benchtop • Max Jaw Opening: 100mm	4
5	Anvil	Anvil • Weight: 5 Kg • S G Iron Casting	1
6. OPT. EQUIP. & CONSUMABLES			
S.NO.	COMPONENTS		QTY
1	HELTEC Automation LoRa32 compatible Arduino Development Board SX1262 ESP32-S3 OLED WIFI Meshtastic		4
2	Sensor set -Temperature sensor module +Vibration switch module +Hall magnetic sensor module+ Key switch module		5
3	Arduino UNO boards		10
4	NodeMCU (ESP8266)		10
5	Raspberry Pi 4 boards		10
6	Peripheral sets for Arduino/ NodeMCU/ Raspberry Pi (Full Set) 40 jumper Wires Male To Male Male to Female Female to Female/ Breadboard Jumper Wires		1
7	ESP32 CAM Development Board		10
8	Raspberry Pi 3 Camera Module Night Vision Camera		5
9	Actuators : 4- relay2. Servo3. DC 4. Stepper (full customized set)		5
10	IOT Sensors -voltage sensor -Pir -Ultrasonic- Ir- Adxl-Dht1-Touch- Rtc- Matrix keyboard-Voltage divider (full customized set)		5
11	IOT Wireless-Gps-Gsm- Lora-. Zigbee set (full customized set)		5
12	IOT -Wires cables customized pcb boards (full customized set)		5

13	Sublimisation machine Dimensions45L x 50W x 50H Centimeters	1
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