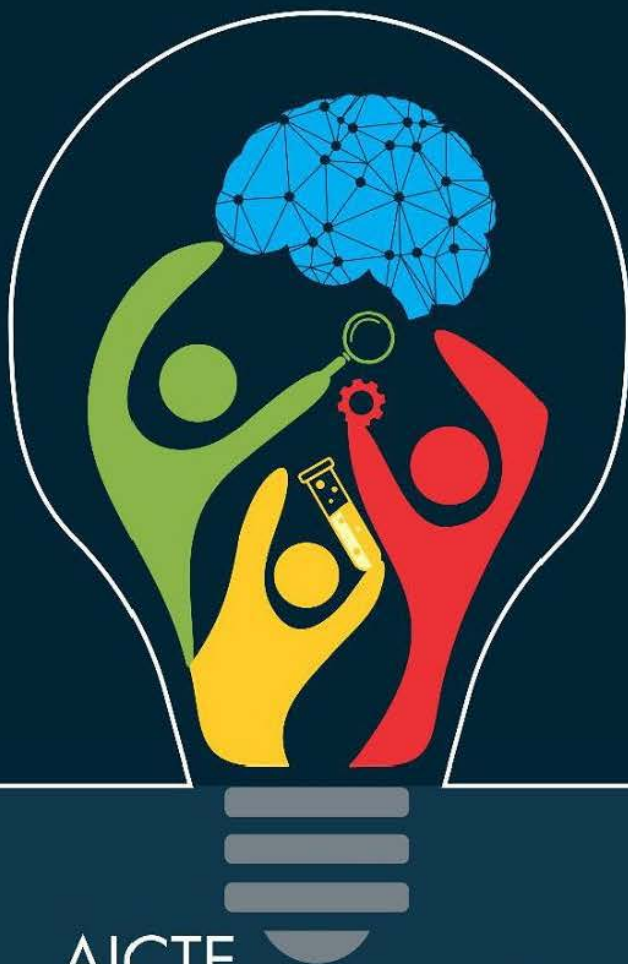




AICTE-IDEA (Idea Development, Evaluation & Application) LAB SCHEME



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ANNEXURE I

List of **Mandatory Equipment** in AICTE-IDEA Lab

S. No.	Name of Equipment
1	Laser Cutter
2	Vinyl Cutter
3	3D Printer
4	3D Scanner
5	CNC Router
6	Mini Desktop Lathe cum Milling
7	Drilling M/c 1 HP Motor
8	Handheld High Speed Drilling M/c-15000 RPM with accessories - 2 Nos.
9	Benchtop Grinder Machine
10	Solder stations (5 nos)
11	Desoldering M/c
12	Advanced, motorized Sewing Machine
13	Wood Lathe
14	Power Tools
15	Portable Welding M/c
16	Refrigerator
17	Normal and Microwave Oven
18	Magnifying Glass with Stand- 2 No.
19	Digital Microscope
20	Mixed Signal Oscilloscope
21	Digital Storage Oscilloscope
22	Signal Generator
23	Variable Power Supply
24	Benchtop Multimeter
25	Projector
26	Heavy Duty Laser Printer
27	PCB Milling Machine*
28	Smart Board
29	Computer Workstation in networking- 5 Nos

* low cost FeCl3 version can also be opted as an alternative

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List of **Mandatory Consumables** in AICTE-IDEA Lab

S. No.	Name of item		
1	Vacuum Cleaner		
2	Hot Air Gun- 5 Nos.		
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		
4	Fire Extinguisher		
5	First Aid Box		
6	Digital Multimeter (5 units)		
7	Clothes Iron (5 units)		
8	Electronic Component Repository (LCR Meter, Variac etc)		
9	3D printer Filament	Depending on the printer	2 rolls
10	Acrylic Sheets	2mm,3mm, 4mm, 5mm All of area 8ft x 4ft	2 sheets each
11	Foam Sheets	8mm, 10mm, 12mm, 15mm All of area 8ft x 4 ft	2 sheets each
12	Ply Boards	8mm, 12 mm, 18mm, All of area 8ft x 4ft	2 sheets each
13	Nylon Rods	12mm, 15mm, 18mm, 25mm All of length 1 m	5 each
14	Nuts	3mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm	100 each
15	Bolts	Dia (3mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm) length (1", 1.5", 2", 2.5")	100 each
16	Screws	3mm, 4mm, 5mm	100 each
17	Washers	3mm, 4mm, 5mm, 6mm, 8mm, 10mm, 12mm	100 each
18	Studs	6mm, 8mm, Length 1m	5 each
19	Nails	1", 2", 3"	100 each
20	Adhesives	M-Seal, Feviquick, Fevi Bond	10 each
21	2Way Tapes	20 rolls	
22	PVC Pipes	.75", 1", 1.5", 2.5", 3" Length 10ft	1 each
23	Aluminum Channels	L, C, Box, Strip Length 12ft	2 each
24	PCB Drill Bits	0.5mm, 0.8mm, 1mm	20 each
25	Drill Bits	3mm, 4mm, 5mm, 6mm,	20 each
26	Drill Bits	8mm, 10mm, 12mm	5 each
27	Carpentry Boring Bits	Entire Kit	1 kit
28	Electronic Active and Passive components	Resistors, Capacitors, diodes and transistors	10 each



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29	USB Cables	For connecting Arduino and other development boards	10
30	Radium Cutter Knives		10
31	Glue Sticks		50
32	Hack Saw Blades	6" and 12"	10 each
33	9V Battery Snaps		20
34	LAN Cables	For connecting Raspberry Pi	5
35	9V Batteries		20

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ANNEXURE II

List of **Mandatory Tools** in AICTE-IDEA Lab

S. No	General & Mechanical Tool Name
1	Hacksaw (5 Nos.)
2	Micro Chisel Set (3 Nos.)
3	Pliers (3 Sets)
4	Manual PCB Drilling Machine (3 Nos.)
5	PCB power Drilling Machine (3 Nos.)
6	Cordless Drilling Machines (2 Nos.)
7	Jigsaw Machines (2 Nos.)
8	Power Circular Saw (2 Nos.)
9	Files Set (2 Sets)
10	File Handles (1 Set)
11	Needle Files (2 Sets)
12	Pipe Vice (2 Pcs)
13	Mini HackSaw (5 Nos.)
14	Ball Peen Hammer (5 Nos.)
15	Steel Shaft Claw Hammer (5 Nos.)
16	Nylon Mallet (5 Pcs)
17	Rubber Mallet (5 Pcs)
18	Allen Key Set (3 Sets)
19	Dremel multi tool kit (2 Nos.)
20	Double ended spanner sets (2 Sets)
22	12 Piece Open ended Spanner Set (2 Sets)
22	Belt and Disc Sanding Machine (1 No.)
23	Scroll Saw Machine (1 No.)
24	Tool Wall covering Perforator (3 pcs)
25	Dremel Moto Saw
26	Bench Grinding Machine
27	Power Return Measuring Tape (5 Nos.)
28	Tri Square 8" (5 Nos.)
29	Stainless Steel Rule (5 Nos.)
30	Digital Vernier Caliper (5 Nos.)
31	Spirit Level (5 Nos.)
32	Dremel Cordless Rotary Tool
33	Power Router
34	Sewing Machine
35	Impact Drill (3 Units)
36	Ratchet Set (2 Units)
37	Router Bit Starter kit
38	Scroll Saw

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**Electrical Tools**

S. No	Electrical Tool Name
1	Hot Air Blower With Soldering Iron (5 Nos)
2	Tin Cutter with Spring (10 units)
3	Centrifugal Blower
4	Screwdriver Sets (2 sets)
5	Cutting Mats (5 Nos.)
6	Vacuum Cleaner (2 Nos.)
7	Hot Air Gun- 5 Nos.
8	Micrometer - 5 Nos
9	Glue Gun-5 Nos
10	Air Compressor
11	Allen Set Wrench(5 set)
12	Tongue and Groove Pliers (5 pcs)
13	Non-contact voltage tester (5 pcs)
14	Wire Stripper (5 pcs)
15	Fish Tape (2 pcs)
16	Flashlights (2 pcs)
17	DC Regulated Power Supply (3 units)
18	Solder Wick (10 pcs)
19	Filament Dehydrator
20	Reflow Oven
21	Glass Cutter
22	Gypsum (10kg)
23	Digital Multimeter (5 units)
24	Clothes Iron (5 units)
25	Oscilloscope (4 units)

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Networking Tools

S. No	Networking Tool Name
1	C-Clamp (10 pcs)
2	Ratchet clamp 8 inches/200mm (10 pcs)
3	Baby Vice 60 mm (5 pcs)
4	Bench vices (5 units)
5	Anvil

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ANNEXURE III

List of **Optional Equipment** & Consumables in AICTE IDEA Lab

(This is a suggestive list. Institutions can choose equipment depending on the area they identify to focus on)

S. No.	Equipment
1	Coil Winding M/c motorized
2	Plotter -Printer
3	HAM Radio transceiver, antenna and related equipment
4	Relevant Software (Academic Licenses)
S. No.	Consumable
1	Sensor set including sensors for Home/ Industry/ Agriculture Automation, Medical diagnosis
2	Arduino UNO boards (10 sets including USB A to B cable+ male –male connecting wires+ female to female connecting wires+ male –female connecting wires)
3	NodeMCU (ESP8266) boards (10 sets (10 sets including USB A to B cable+ male –male connecting wires+ female to female connecting wires+ male –female connecting wires)
4	Raspberry Pi 4 boards (05 sets including HDMI – mini HDMI connector, Memory card of 8 GB, adaptor, casing)
5	BeagleBone AI for Artificial Intelligence based applications (5 sets)
6	BeagleBone -Black-Wireless 5 sets)
7	Peripheral sets for Arduino/ NodeMCU/ Raspberry Pi (10 sets)
8	ESP32 CAM Development Board WiFi+ Bluetooth with OV2640 Camera Module (5 sets)
9	Solnoi Electronics Raspberry Pi 3 Camera Module Night Vision Camera (5 sets)