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

AICTE
IDEALab

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

AICTE has decided to establish IDEA (Idea Development, Evaluation & Application) Lab in AICTE approved institutions, encouraging students for application of science, technology engineering and mathematics (STEM) fundamentals towards enhanced hands-on experience, learning by doing and even product visualization. As a common facility embedded in the institution, the IDEA Lab will make engineering graduates more imaginative and creative, besides getting basic training in the 21st century skills like- critical thinking, problem solving, design thinking, collaboration, communication, lifelong learning etc. IDEA Lab can facilitate the students and faculty to "engage, explore, experience, express and excel" as desired by the Hon'ble Prime Minister in the wake of release of National Educational Policy 2020.

Proposal

As the IDEA Lab is going to be a long-term intervention aiming to transform education imparted in the institution, the proposal must spell out a clear vision for the Lab, plan of implementation, mobilization of resources, strength and enthusiasm of faculty, utilization and expansion of facilities, etc. The alignment of activities with larger national goals/ missions/ initiatives or industrial requirements or serving disadvantaged sections of society etc. and commitment of resources for the same, will impart an edge for any proposal. Shortlisted proposals will be subjected to scrutiny by a panel of experts before sanctioning of the project by AICTE.

Implementation

The college/ educational campus/ university and industry are expected to participate financially, to match the contribution sought from AICTE or even exceed it, in establishing the IDEA Lab which ideally requires an area of 5000 sq. ft. The Lab which should ideally remain open 24x7, has to be equipped with facilities, tools and consumables to support translation of an idea to prototype development or develop solution of a problem. The institutions have to hold workshops/ trainings, ideation sessions, boot-camps, competitions etc. and participate in similar activities organized by other IDEA Labs/ organizers and also in national/ international events so as to ensure that IDEA Lab is used productively and also extensively.

AICTE expects that an IDEA lab will greatly enhance the visibility of the institution among stakeholders and significantly improve the employability of students by imparting 21st century skills. All of them have to become part of IDEA Lab Network (IDEALNET) to learn from each other, collaborate and enhance their performance.

The institution must also agree to maintain the IDEA Lab, keep it well-furnished, take care of security, provide a safe working environment and stock adequate supplies of consumables. The institution must provide necessary staff and all support facilities and amenities required to operate and maintain the Lab. It should also agree to guidelines issued by AICTE in the matter of IDEA Lab and other Government of India rules besides following the enunciated Code of Conduct (as in Annexures) in letter and spirit.

A set of Question & Answers is given later in this document for better understanding of the concept and its implementation.

Eligibility

- AICTE approved engineering colleges/ university departments in existence for having at least 10 years and at least one course with live NBA accreditation.

- Aspiring institutions shall have to muster financial contribution to the tune of at least 50% for the IDEA Lab. Weightage will be given to additional quantum of funds, coming specially from industry.

- The institution must provide a built-up and furnished space of 3000 sq. ft. to house

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the IDEA Lab (2000 sq ft for Lab & 1000 sq ft for student activities), though the ideal requirement is 5000 sq ft. It must provide all support staff, facilities and amenities required to operate and maintain the Lab

Financial Assistance

Estimated project cost per AICTE Lab is Rs. 110 lakh- non-recurring expenditures (covering the cost of equipment, tools and consumables) of Rs. 80 lakh and recurring expenditures (covering the cost of events and activities for two years) of Rs. 30 lakh. AICTE can provide up to 50% i.e. Rs 55 lakh.
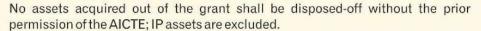
Duration of the Project

Duration of project will be two years from the date of receipt of funds by the institute. AICTE will monitor the IDEA Lab as part of IDEA Labs Network (IDEALNET) for 5 years, so that cultural change in the campus becomes visible due to the fully functional Lab.

Monitoring

All IDEA Labs will, by default become a part of IDEA Lab Network, and subject to periodic monitoring on common parameters identified by AICTE. The performance visible to all, may be normalized for inducing healthy competition among all IDEA Labs, with collaborations also incentivized. This will help in significantly improving the visibility of the institution through qualitative improvement of graduates and also faculty.
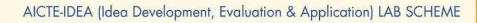
Terms & Conditions

1. Head of the Institution (HOI) shall be the ex-officio Chief Mentor (CM) of the IDEA Lab, which shall be managed by the students. CM has to nominate a Faculty Coordinator (FC) and also a Faculty Co-coordinator (FCC) to assist her/him in implementation, coordination and liaising with students managing the Lab. The Faculty Coordinators can be authorized to liaise with stakeholders.

2. HOI/CM shall be responsible for execution and completion of the sanctioned project, followed by submission of all related documents including the project report.

3. Any expenditure incurred prior to the issuance of the approval letter is not allowed to be adjusted in the grant. The grant shall be utilized strictly for the purpose as specified in the sanction letter. The institution can add existing equipment, conforming to the list/ specifications drawn by AICTE, to IDEA Lab with due intimation; however, such equipment will not be considered as a financial contribution of the institution to the IDEA Lab.

4. GFR rules as announced by the GOI shall be used during Utilization of the grant. Re- appropriation of funds from one head to another is strictly not permitted unless recommended otherwise by AICTE experts. AICTE will release upto 80% of the sanctioned amount as the first instalment, against deposition of proportional share in the Bank Account of IDEA Lab.

5. Once the project is sanctioned, the AICTE shall not consider any request for additional grants. Institute will invest funds for completion of the project in case there is a shortfall of money and also in running the IDEA Lab beyond two years.

6. Separate institutional overhead expenses shall not be provided by AICTE.

7. The assets acquired out of the grant shall be the property of the institution and should always reflect in its Book of Accounts including the Assets Register. They should be certified by the concerned HOI and Faculty Coordinator.

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No assets acquired out of the grant shall be disposed-off without the prior permission of the AICTE; IP assets are excluded.

8. Host institute shall not claim IP generated by mere use of the IDEA Lab facility by users, including students, faculty and third party.

9. If the beneficiary institute exhibits non-performance and non-compliance to the conditions of IDEA Lab Scheme, AICTE may seek refund of unspent AICTE grant-in-aid and may debar institute from applying for grants

10. It will be the responsibility of the institution to collect the funds from industry, committed for the project and inform AICTE, before seeking funds from AICTE.

11. If the project is foreseen to remain incomplete within the project duration, the institute must seek approval from the AICTE at least two months before completion of the project duration. If approved, the project duration may be extended to upto a year. If not, the unspent amount along with the interest earned on it should be returned to the AICTE.

12. The grantee shall furnish to AICTE, Utilization Certificate and an Audited Statement of Accounts pertaining to the grant as per the prevalent Financial Rules of Government of India.

13. AICTE reserves the right to terminate support to the project at any stage, if it is convinced that the grant is not being utilized properly or that appropriate progress in the project work is not being made.

14. AICTE will not have any liability towards the manpower appointed by the grantee institution for implementation of the project.

15. AICTE will have no responsibility in case any loss is caused to any life or property due to accident, fire or any other reasons. The host institute is required to take appropriate safety and insurance measures to safeguard against any loss to human life and property related to IDEA Lab.

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Q&A

Q. **What is an IDEA Lab & what is the idea behind it?**

A. The purpose of IDEA Lab is to provide all facilities under one roof, for conversion of an idea into a prototype. With these facilities in the campus, more students and faculty will be encouraged to take up creative work and in the process, get training on creative thinking, problem solving, collaboration etc. which conventional labs are not able to. The focus will be on training students so that they become imaginative and creative and stay so at the workplaces they join. The whole idea is to transform engineering education with such a Lab in all colleges and for this they must proactively expose all students to the IDEA Lab, organize training sessions for interested students as well as support projects and by providing online learning materials.

Teachers must also get trained in these Labs to know their scope and opportunities in teaching learning processes as well as research and development projects. They should encourage the students to take up and themselves get involved in activities, projects, internships which involve utilization of such Labs. They must strive for creating problems/ projects/ internships in their own subjects/ disciplines and mentor the students.

Q. **For whom the IDEA Lab is meant and can they be charged?**

A. IDEA Lab is meant for students and faculty of the college/ educational campus/ University who are not to be charged but must be registered as users. Students and faculty from other schools or colleges must also be encouraged to use the facilities. Usage by industry, entrepreneurs, start-ups, alumni etc will be encouraged to use it and can be charged to recover the cost of consumables and operations.

Q. **Which institutions are eligible for applying for AICTE IDEA Lab?**

A. Institutions (including part of educational campuses or universities) more than 10 years old are eligible for applying and must have at least one course accredited by the NBA. In the first year of scheme, institutes located in places other than mega and metros [as defined in APH of AICTE: Greater Mumbai (UA), Delhi (UA) and Kolkata (UA), Chennai (UA), Bangalore (UA), Hyderabad (UA), Ahmedabad (UA), Pune (UA), Surat (UA)] will be given preference. So if you are not having any accredited course, you are strongly advised to go for it this year, to be eligible for applying against subsequent calls for proposal. Also, your association and IDEA Lab will be given weightage when you apply next year.

Q. **What type of civil infrastructure is required for an IDEA Lab?**

A. Ideally, a built up area of 5000 sq. ft. is required. But the institution must agree to provide a minimum built-up and furnished space of 2000 sq. ft. for the laboratory and an additional 1000 sq. ft. to facilitate activities under IDEA Lab. The installation of equipment has to be done taking into account all safety and environmental concerns.

Q. **What hardware constitutes an IDEA Lab?**

A. In order to support do-it-yourself activities and facilitate translation of ideas into prototypes, each IDEA Lab must be equipped with tools, components and consumables. Equipment and consumables have been identified (in Annexure I) and tools (in Annexure II) which need to be there for a fully functional IDEA Lab as a complete unit. This investment is absolutely necessary so that activities to be taken up under the Lab are not stalled. It is imperative that the components and consumables for electrical, electronic and mechanical are stocked up in IDEA Lab and replenished frequently. Optional equipment, tools, consumables are also

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given, as a suggestive list (Annexure III) but the institutions are free to add from their side depending on the focus they decide for the IDEA Lab and reflect in the proposal. It is expected that colleges will buy good quality equipment, tools and consumables which should help improve their performance and in turn, revenue generation also.

Additional facilities from own resources should be added and if reflected in the proposal will earn more weightage in evaluation, as an indication of resources in implementation of the project. It is suggested that colleges interact with other local industries/ agencies who can make use of the facilities at designated times; by contributing a small amount, they can have access to facilities worth a crore of rupees.

Q. Can the institute contribute in raising IDEA Lab through existing equipment?

A. The institution can shift permanently equipment/ tools they may be having with them to the IDEA Lab. However, they will not be included in the budget but reflected in the inventory.

Q. Can more than one institution join?

A. The utilization of facilities for the purpose they are given, to the maximum extent, is of paramount concern for AICTE. Towards this, institutions can come together under a lead institution which is eligible to apply. The Lab has to be in the premises of the lead institution which will be responsible for executing the project and ensuring that participating institutions and industries are not a liability on IDEA Lab/ Institution.

Q. Can the entire non-AICTE funding be from the institution?

A. Yes, the contribution can be from college but this is an excellent opportunity to reach out to industry inviting them for a national initiative. With gates opened for industry, the revenue generation and hence, prospects for sustenance of Lab enhance significantly. This is besides the live problems/ challenges they can offer to the colleges and technical experts as well.

Q. What are the activities that an IDEA Lab has to take up?

A. The following table lists activities/ events and their number/ frequency in AICTE IDEA Lab and there has to be commitment to conduct minimum numbers, to be eligible for sanctioning of the project.

Sr. No.	Event & Duration	Target & Batch size	Objective & Justification	Frequency/ Numbers
1	FDP (06 Days)	Faculty (20)	Faculty needs to be trained on equipment, to be able to guide students and conduct events- including those from other institutions	Twice in a year
2	Skilling Programs (06 Days)	Students (20-30)	Training in areas like electrical and electronics fabrication, embedded systems design. Embedded programming, 3D printing, robotics, welding, IOT, Machine learning, AI, bio-engineering, biomedical etc	One per quarter
3	Bootcamps (12 Days)	Faculty (05-10)	Training of faculty (including those from other institutions, spread over few weeks, continuing at workplaces, if required	Twice a year

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4	Ideation workshops (03-05 Days)	Students (30-40)	To generate ideas on which students can work in the IDEA Lab, including field visits	Once in three months
5	Awareness Workshops for Industry (02 Days)	Industry participants (5-10)	Publicizing IDEA Lab among industries, to encourage them to use the facilities	Once in three months
6	Internships (2 to 6 months)	Students (15-20)	For hands-on training as part of their course-work during summer and winter vacations. Internships based on industry problems should be preferred.	As per curriculum.
7	Professional Skilling Programs (12 Days)	ITI students or class 10/12 pass students (5-10)	Welding, 3D printing, mechanical fabrication. etc	Once in a quarter
8	School Teachers Awareness Program (06 Days)	Teachers of nearby schools	Demonstration and providing hands-on experience of facilities	Twice a year (during school vacations)
9	Projects by School students	Students identified by schools (10-15)	Opportunity for school students to do projects	Once a year (as per convenience)
10	Open Day for school students (one day)	Students (class XI-XII) nominated by schools (25-30)	Exposure to facilities in IDEA Lab to ignite their minds (on Science Day/Technology Day/Teachers Day/ Engineers Day)	Once a year (as per convenience)
11	Participation in annual technical exhibitions	Nationwide IDEA labs	Technical exhibitions etc For example, Tech FEST, Mind SPARK etc. organized by renowned Institutions/ Industries etc to showcase activities/products/prototypes developed in IDEA labs	Once in a year
12	Newsletter	Nationwide IDEA labs	To disseminate information to all the labs about activities of other labs, technology issues, any interesting development etc.	Monthly/ Bi-monthly
13	Webpage	All stakeholders	For web-presence of IDEA Lab, and showcasing itself before the stakeholders and other IDEA Labs	Weekly/ Bi-weekly updation
14	Annual conference/ symposium of all IDEA labs	All IDEA Labs, DIY labs or similar labs across the nation/outside the nation also	To promote active interaction, showcase of lab activities, promote collaboration at national and international level labs	Once in a year

* Students and faculty from other colleges should be encouraged for using the facilities
*Events calendar shall have to be drawn ensuring that timings for different groups do not clash and are also convenient.
*Visit to IDEA Lab in batches, should be included in the Student Induction Program

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Q. Who operates and manages IDEA Lab?

A. The Head of Institute will be the ex-officio Chief Mentor (CM) of the AICTE IDEA Lab, responsible for overall implementation of the project. He/she has to identify a dynamic faculty in the proposal itself, to serve as Faculty Coordinator (FC) and also one Faculty Co-coordinator (FCC) for day-to-day running of the Lab. The identified faculty should be dynamic, creative and go-getter, having a background in Electrical/ Electronics/ CS/ IT/ Mechanical Engineering or related fields. Faculty Coordinator shall have to mandatorily attend the Bootcamps (of 6-10 days) which AICTE will organize, to understand the establishment and operations. Three AICTE IDEA Lab Student Ambassadors must be identified by CM to assist FC & FCC in day-to-day activities, on a rotation basis for 3 or 4 months.

Q. How are Student Ambassadors to be selected?

A. Students from the 3rd/ 4th year of UG or any year of PG course who show keen interest in the activities and regularly participate in them, can be nominated. Institute can frame its own set of rules for this. Upto 3 Ambassadors can be there at a time and should be rotated, maintaining gender equity.

Q. What shall be the operational hours for IDEA Lab?

A. The Lab has to remain open for the students and faculty at least from 9am to 11pm. But this should not limit usage of facilities there-in and period should be extendable on the demand of students/ faculty. Certain activities/ events/ operations in the Lab may require keeping the Labs open 24x7 also.

Q. How can other faculty make use of the facilities?

A. IDEA Lab is as much to be used by faculty, as students, including for their research work. They can work on their ideas independently or by involving students. They can create internship projects or practical work which require significant use of IDEA Lab and also facilities in their own departments. Working on interdisciplinary projects involving IDEA Lab would be appreciated.

Q. Can the Head of the Institution (HOI) delegate responsibility to another faculty?

A. As Chief Mentor (CM) of IDEA Lab, the overall responsibility of execution of the project and also its usage by all students/ faculty/ industry lies with the HOI. The Faculty Coordinator (FC) and Faculty Co-coordinator (FCC) should assist HOI/ CM and also oversee that students are able to use the facilities. FC and FCCs and technical staff should be sent for any training or meetings organized by AICTE/ IDEALNET. Institute may on its own, engage staff for other requirements it feels necessary for smooth functioning, e.g. IT, Admin, Liaison etc.

Q. Can the institution put in place a committee for implementation of the IDEA Lab project?

A. It's the prerogative of the institution to have one, as an internal mechanism. However, it should in no way become an impediment, at any stage, in the functioning of the Lab.

Q. Can more equipment be added, by the institution from its own resources?

A. It is expected that the institute decides to focus on either a national initiative/ mission/ goal or any segment of industry and align the IDEA Lab with it. Alignment with a socio-economic sector or disadvantaged sections of society could also be thought of, depending on local needs, if the institution so feels. This should, with added infrastructure, give the institution an edge and improve its

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performance and visibility. The quantum of additional amount committed by institutions, over and above mandatory equipment will significantly add to the merit.

Institutions can also link IDEA Lab with their existing advanced/ special facilities that it may be having and augment them further. They should reflect it in their proposal clearly spelling out how linking benefits the students, faculty and industry.

Q. What does an industry get by contributing financially in establishment of an IDEA Lab?

A. As a recognition of their contribution in establishing an IDEA Lab, an industry matching the grant from AICTE or contributing more will be privileged to prefix its abbreviated name to "AICTE IDEA LAB". For example, if an industry with abbreviated name PQRS is contributing what AICTE is or even more, then it could be named as "PQRS AICTE IDEA LAB". Other industries having smaller financial stakes can be priority users of facilities.

Q. Can more than one industry join?

A. As long as interested industries are an asset and not a liability on IDEA Lab/ Institution, they are welcome to contribute and participate. They can be given preference over non-contributing industries, in making use of the facilities of IDEA Lab.

Q. Can we charge the users of IDEA Lab?

A. Users other than students and faculty can be charged. Revenue generation will be a performance indicator and is strongly encouraged, for sustenance of the Lab. Faculty/ teachers/ staff attending the courses organized by the Lab, which earn a certificate useful for career advancement, can be charged nominally. There can be differential charges for users of facilities and those for a course/ training.

Q. What will be the mechanism of monitoring?

A. Data on 15-20 parameters will have to be provided and uploaded on a weekly/ fortnightly/ monthly basis, as decided by AICTE. Points based on parameters will be added up to reflect the overall performance. The performance of all IDEA Labs will be reflected on a website maintained by AICTE. Thus, there will be a leader-board on the website which will show the weekly standing and overall performance of each IDEA Lab. This should enhance the visibility of the institution among stakeholders and earn recognition from various quarters.

Q. Will we be able to apply again if we miss this year?

A. Yes, if the scheme is open. However, institutions must acquire accreditation for more courses to enhance their chances. The institutions who associate themselves with an established AICTE-IDEA Lab and make use of the facilities will get weightage in the next year.

Q. Can we set up an IDEA Lab without AICTE funding?

A. Institutes are free to set up similar Lab from their own resources, but cannot be part of IDEA Labs Network (IDEALNET) which naturally comes with a lot of advantages that any network has. If they have upto 75% equipment identified for IDEA Lab, are willing to add more equipment from their own resources and have engaged in activities like IDEA Lab, they could be considered for IDEALNET at a later point of time that will be decided by AICTE.

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Q.   When and how will AICTE release funds?

A.   AICTE will release 80% of sanctioned amount as first instalment only after matching grant is deposited in the exclusive Bank Account of IDEA Lab and proof submitted. The second instalment of 20% will be released based on the (a) performance (b) utilization of AICTE's first instalment (c) deposition of 20% amount from non-AICTE sources and any other funds committed in the sanctioned project, besides other documents stipulated for fund release.

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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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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)

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

CODE OF CONDUCT FOR AICTE-IDEA LAB
(to be accepted by the Institution sanctioned the project)

<< Name of the College >> agrees to

- Allow 24x7 access the students, faculty and industry for full utilization of facilities therein

- Have the Head of Institution as Chief Mentor, besides, nominate one Faculty Coordinator, one Faculty Co-coordinator & three Student Ambassadors for running the IDEA Lab. Student Ambassadors will be selected from senior classes and given responsibility on a rotation basis.

- Integrate activities/ pursuits at the IDEA Lab with academic programmes run by the institution

- Promote use of IDEA lab by students from all engineering departments including from nearby institutes- for developing creative and innovative multidisciplinary projects as a part of their curriculum.

- Allow linkages of the IDEA lab with facilities like library, clubs, incubation center etc in the campus

- Ensure security of IDEA Lab (controlled access) and safe working environment inside for the users

- Proactively reach out users and conduct programmes aimed at utilization of IDEA Lab

- Strive to generate revenue to maintain and continuously upgrade the infrastructure

- Be integral part of IDEA LABS Network (IDEALNET)- a national network of IDEA Labs created by AICTE overseen and guided by National IDEA Labs Steering Committee

- Enthusiastically undertake activities identified for constituents of IDEALNET

- Provide data on the infrastructure, activities and achievements of the IDEA Lab

- Maintain a distinct physical identity in the campus and promote it in all forms/ formats of media with right use of the logo of IDEA Lab.

- Maintain a separate jointly-operated bank account for IDEA Lab

- Participate in national initiatives of the governments announced from time to time

- Take timely action in protection of IP including patents, if any

- Abide by rules/ regulations/ norms of AICTE or other regulatory bodies, as applicable to other departments/ cells/ units in the campus

Date...........
Place...........

Name & Signature of the
Head of Institution

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