



महाराष्ट्र MAHARASHTRA

2025

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MEMORANDUM OF UNDERSTANDING (MoU)

This Memorandum of Understanding ("MoU") is executed on this 18th day of February, 2026 at Kankavli.

BETWEEN

PHN Technology Private Limited,

a company incorporated under the provisions of the Companies Act, 2013, having its registered office at Tower A, Giga Platinum, Viman Nagar Rd, near Akoya Skoda Showroom, Clover Park, Viman Nagar, Pune, Maharashtra 411014

acting through its Authorized Signatory,

(hereinafter referred to as "PHN", which expression shall, unless repugnant to the context or meaning thereof, include its successors and permitted assigns);

AND



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Name of College / Institution: Sindhudurg Shikshan Prasarak Mandal's College of Engineering Kankavli.

(Engineering)

having its address : A/P Harkul Budruk, Taluka - Kankavli, District - Sindhudurg, Maharashtra - 416602

acting through its authorized representative Sindhudurg Shikshan Prasarak Mandal, (hereinafter referred to as the "**Institution**").

PHN and the Institution are hereinafter individually referred to as a "**Party**" and collectively as the "**Parties**."



1. PURPOSE

The purpose of this Memorandum of Understanding ("MoU") is to establish a collaborative framework between **PHN Technology Private Limited** and the **Institution** to promote industry-academia interaction and to complement the existing academic curriculum by providing students with exposure to practical, industry-oriented learning.

Signature

This MoU aims to facilitate the establishment and operation of an advanced **Technology Laboratory** within the Institution's premises and to enable the conduct of **optional, non-mandatory training, certification, skill development, and experiential learning programs** in emerging technologies.

The collaboration under this MoU is intended solely for academic enrichment, skill enhancement, and employability development of students and shall not interfere with or replace the Institution's prescribed academic curriculum, statutory requirements, or regulatory compliances.



2. SCOPE OF COLLABORATION

Subject to the terms and conditions of this Memorandum of Understanding ("MoU"), **PHN Technology Private Limited** shall establish, install, operate, and manage a **Technology Laboratory** within the premises of the Institution and shall provide industry-relevant training and skill development programs for students.

The scope of collaboration under this MoU shall include, without limitation, the following activities:

- a. Establishment, installation, operation, and maintenance of a fully functional **Technology Laboratory** within the Institution's premises (as per Annexure A), wherein **PHN Technology Private Limited** shall provide only the necessary technical materials, equipment, kits, and learning resources required for the laboratory. It is expressly agreed that **PHN** shall not provide any furniture, including tables, chairs, racks, or fixtures, nor any laptops, desktop computers, or related IT infrastructure
- b. Design and conduct of technology-based training camps, Professional trainings and short-term programs, including the provision of take-away learning kits for hands-on practical learning (**As per Annexure B**);

- 
- c. Delivery of IIT's certification programs, skill development courses, and industry-oriented training modules in emerging technologies;
 - d. Delivery of ISRO, Skill India, NSDC certification programs.
 - e. Organization and conduct of workshops, seminars, guest lectures, and Faculty Development Programs (FDPs);
 - f. Provision of hands-on training, project-based learning, and practical industry exposure to students;
 - g. Facilitation of industry-academia interaction initiatives, including expert talks and collaborative activities;
 - h. Offering internship opportunities, live projects, and project guidance to eligible students, subject to availability and PHN's sole discretion.
 - i. To provide platform to Visit IIT campuses.

 For the avoidance of doubt, all programs and activities conducted under this MoU shall be **optional and non-compulsory** for students. However, college will help PHN to get maximum no of students count for the program offered. To avail the benefits under this MoU, PHN shall charge a nominal subscription fee to interested students, through which they will be eligible to receive substantial discounts on the courses listed in Annexure B.

2.1 TIMELINE FOR LAB ESTABLISHMENT

The Parties mutually agree that the PHN Technology Laboratory will be established and made operational in the next academic year.



PHN Technology Private Limited shall begin the lab setup process once the Institution provides the required infrastructure, including suitable space, electricity, internet connectivity, furniture, and other basic facilities.

If the Institution fails to provide the necessary infrastructure on time, the lab setup schedule shall be extended accordingly, and PHN shall not be responsible for any resulting delay.

3. FINANCIAL UNDERSTANDING

3.1 Lab Setup Investment

PHN Technology Private Limited shall, at its own cost and expense towards the establishment of the Technology Laboratory within the Institution's premises.

The aforesaid investment shall include, without limitation, procurement and deployment of the following, as detailed in **Annexure A**:

- a. Hardware and computing devices
- b. Software tools
- c. Training and learning kits

- d. Lab infrastructure support components
- e. Initial setup, installation, and commissioning of the Technology Laboratory

3.2 Ownership and Control of the Technology Lab

- a. All equipment, hardware, software, tools, training kits, instructional materials, and any other assets installed, supplied, or provided by PHN under this MoU shall remain the **sole, absolute, and exclusive property of PHN Technology Private Limited** at all times.
- b. The Institution shall act solely as a **host and facilitator** of the Technology Laboratory and shall not acquire any right, title, interest, lien, or claim of ownership in respect of the Technology Laboratory or any of its assets.
- c. The **standard operating procedures (SOPs)**, usage guidelines, operational protocols, and access controls for the Technology Laboratory shall be determined and prescribed by PHN Technology Private Limited, **in consultation with the Institution**, in accordance with **Annexure C**, and shall be binding on the Institution and all users of the laboratory.



4. COURSE STRUCTURE & DELIVERY MODEL

- a. PHN Technology Private Limited shall design, develop, and conduct multiple industry-oriented courses, training programs, and certification modules in emerging and advanced technology domains, which may include, without limitation:

Artificial Intelligence (AI)

Internet of Things (IoT)

Robotics

Embedded Systems

Automation Technologies

Industry 4.0 and allied technologies

Other emerging and future-ready technology domains



- b. The courses, programs, and training activities conducted in the Technology Laboratory shall be governed by the following principles:

- i. Participation in such courses shall be optional and non-compulsory for students of the Institution;
- ii. The courses shall be offered at reasonable, minimal, and affordable fees, as determined by PHN Technology Private Limited;
- iii. The courses shall be open to students from all departments and disciplines of the Institution, subject to eligibility criteria, if any, prescribed by PHN;

iv. PHN may, at its discretion, extend participation in such courses to external participants, without affecting or prejudicing the interests of the Institution or its students.

For the avoidance of doubt, the courses conducted under this clause shall supplement academic learning and shall not replace, modify, or interfere with the Institution's prescribed academic curriculum or statutory academic requirements.

5. FACULTY & MANPOWER ARRANGEMENT

5.1 Deployment of Trainers

PHN Technology Private Limited shall, at its sole cost and discretion, deploy **qualified Master Trainers, Lead Instructors, and technical staff** required for conducting courses, training programs, workshops, and skill development activities in the Technology Laboratory. The deployment, roles, and responsibilities of such trainers shall be determined exclusively by PHN.

5.2 Internship Opportunities

PHN may, at its sole discretion, offer an **internship** to eligible students of the Institution.

The **selection criteria, duration, scope of work, responsibilities, stipend, and all other terms and conditions** relating to such internship opportunities shall be determined **exclusively by PHN**, and the Institution shall have no obligation or liability in this regard.

For the avoidance of doubt, participation in such internships shall be **voluntary** for students and shall not constitute a right or entitlement under this MoU.

6. ROLES & RESPONSIBILITIES OF PHN

PHN Technology Private Limited shall be solely responsible for the following in connection with the establishment and operation of the Technology Laboratory and the delivery of training programs under this MoU:

- a. **Investment and Lab Establishment:** Making all financial and material investments required for the setup, installation, and operationalization of the Technology Laboratory within the Institution premises.
- b. **Curriculum and Study Material:** Designing, developing, and providing all course content, curriculum, instructional material, manuals, and training aids necessary for the programs conducted in the Technology Laboratory.
- c. **Deployment of Trainers:** Recruiting, deploying, and managing qualified Master Trainers, Lead Instructors, and technical personnel required for conducting programs, workshops, certification courses, and skill development initiatives.
- d. **Provision of Hardware and Software:** Supplying all equipment, hardware, software, tools, learning kits, and related resources required for the effective functioning of the Technology Laboratory and delivery of training programs.

e. **Certification:** Facilitating and issuing participation or course completion certificates to students who successfully complete the programs, in coordination with the Institution where applicable.

f. **Marketing and Promotion:** Conducting all marketing, promotion, and awareness activities related to the programs, courses, and workshops under this MoU.

g. **Assessments and Evaluations:** Conducting practical assessments, evaluations, and project reviews in accordance with the training and certification programs.

h. **Maintenance of Lab Equipment:** Ensuring proper maintenance and upkeep of all lab equipment, hardware, software, and tools supplied by PHN, subject to **normal wear and tear**.

For the avoidance of doubt, PHN shall have **full operational control** over the Technology Laboratory, its programs, and related resources, while the Institution's role shall be limited to facilitation and support as defined elsewhere in this MoU.

7. ROLES & RESPONSIBILITIES OF THE INSTITUTION

The Institution agrees to provide reasonable cooperation and facilitation for the successful establishment, operation, and management of the **PHN Technology Laboratory** and associated programs under this MoU. Specifically, the Institution shall be responsible for:

a. **Infrastructure Support:** Providing a suitable space for the Technology Laboratory, along with uninterrupted electricity, internet connectivity, furniture, security, and housekeeping services required for smooth operation.

b. **Promotion of Programs:** Assisting in promoting the training programs, courses, workshops, and skill development initiatives conducted by PHN to students of the Institution, without any obligation to collect fees or manage registrations.

c. **Coordination Support:** Providing timely administrative support and coordination as may be reasonably required for the execution of programs, including facilitating access to students, faculty, and institutional resources.

d. **Single Point of Contact (SPOC):** Nominating a dedicated **Single Point of Contact (SPOC)** to liaise with PHN for all operational, logistical, and coordination matters.

e. **Non-Interference:** Ensuring that PHN is able to operate the Technology Laboratory, conduct courses, deploy trainers, and execute programs **without obstruction, interference, or delay**, subject to compliance with institutional rules and regulations.

For the avoidance of doubt, the Institution shall **not have any ownership rights** over the Technology Laboratory, its equipment, curriculum, intellectual property, or any other resources supplied by PHN, and its role shall be strictly facilitative in nature.

8. REVENUE MODEL & FEE COLLECTION

8.1 Paid Courses and Programs

All courses, training programs, workshops, camps, and certification initiatives conducted in the **PHN Technology Laboratory** shall be offered on a **paid basis**, with the schedule, fee structure, and payment terms determined **exclusively by PHN Technology Private Limited**.

8.2 Fee Collection

- a. All participation fees for the courses, programs, or camps shall be **collected directly and solely by PHN Technology Private Limited** through its authorized payment collection systems. The Institution shall **not collect, handle, or account for any fees** under this MoU.
- b. PHN shall bear **all operational expenses**, including, without limitation, trainers' remuneration, course material, kits, marketing, certification, and logistics. The Institution shall have **no financial liability or responsibility** in this regard.

9. ASSET OWNERSHIP AND PROTECTION

9.1 Ownership of Lab Assets

 All equipment, hardware, software, learning kits, and other materials provided by PHN Technology Private Limited for the purpose of establishing and operating the Technology Laboratory shall remain the **exclusive property of PHN**, and nothing in this MoU shall be construed as granting the Institution any ownership rights or title thereto.

9.2 Responsibilities of the Institution

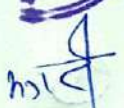
 The Institution shall be fully responsible for ensuring the **safety, security, and proper use** of all lab equipment and materials provided by PHN, including but not limited to:

- a. Preventing theft, loss, or damage to the lab assets;
- b. Ensuring proper and authorized use of equipment, software, and training kits;
- c. Providing necessary security arrangements, supervision, and maintenance support to safeguard PHN assets.

9.3 Liability for Loss or Damage

 Any loss, theft, damage, or destruction of lab assets resulting from **negligence, misuse, or willful misconduct** by the Institution, its employees, students, or contractors shall be **recoverable from the Institution**, and PHN shall have the right to claim full replacement or repair costs.

9.4 Inspection Rights

 PHN shall have the **unrestricted right to inspect, audit, and verify** the condition, use, and maintenance of all assets provided for the Technology Laboratory at any reasonable time, without prior consent from the Institution, to ensure compliance with the terms of this MoU.

10. CERTIFICATION

- a. PHN Technology Private Limited shall facilitate the issuance of certificates of participation, course completion, and/or skill proficiency to students who successfully complete the programs, courses, or training activities conducted under this MoU in the Technology Laboratory.
- b. PHN shall provide various certification courses in collaboration with reputed and recognized organizations including, but not limited to, IITs, ISRO, Skill India, NSDC, and other relevant national or international certification bodies, as may be applicable from time to time.

c. Certificates for such programs shall be issued by PHN Technology Pvt. Ltd. either independently or jointly with the concerned certifying organization, as per the nature and requirements of the respective course or program, unless otherwise mutually agreed in writing between the Parties.

d. The design, content, format, evaluation criteria, and issuance process of all certificates shall be determined solely by PHN. The Institution shall extend necessary and reasonable cooperation, including authentication, verification, or co-signing of certificates, wherever required.

e. The issuance of certificates under PHN programs shall be purely supplemental in nature and shall not confer any academic credit, degree equivalence, or modification to the Institution's prescribed curriculum. Participation in such programs shall remain voluntary for students.

11. CONFIDENTIALITY

a. **Definition of Confidential Information:** For the purposes of this MoU, "Confidential Information" shall include, without limitation, course content, curriculum, training methodologies, business models, pricing and fee structures, technical know-how, software, project designs, learning kits, and any other information disclosed by one Party to the other, whether in written, electronic, or oral form.

b. **Obligation of Confidentiality:** Both Parties agree to maintain strict confidentiality regarding all Confidential Information received from the other Party and shall not disclose, share, or use such information for any purpose other than for the performance of obligations under this MoU.

c. **Exclusions:** Confidential Information shall not include information that:

- i. is or becomes publicly available through no fault of the receiving Party;
- ii. was lawfully in possession of the receiving Party prior to disclosure;
- iii. is independently developed by the receiving Party without reference to the Confidential Information; or
- iv. is required to be disclosed by law, regulation, or court order, provided the disclosing Party is given prior notice.

d. **Survival:** The obligations under this Clause shall survive **termination or expiry** of this MoU for a period of **five (5) years**.

12. DURATION OF MoU

a. This MoU shall remain valid and in force for a period of **five (5) years** from the **date of execution**.

b. The MoU may be **renewed or extended** upon mutual written agreement of the Parties, under such terms and conditions as may be mutually agreed.

c. Unless renewed, this MoU shall **automatically expire** at the end of the five-year term, without prejudice to the rights and obligations accrued prior to expiry, including but not limited to confidentiality, asset ownership, and revenue settlement.

13. TERMINATION

13.1 Termination by Mutual Consent

This MoU may be terminated at any time by **mutual written consent** of both Parties, specifying the effective date of termination.

13.2 Termination at PHN's Sole Discretion

PHN Technology Private Limited reserves the **absolute and unconditional right** to terminate this MoU **immediately and at its sole discretion**, without assigning any reason and **without any liability, obligation, or financial commitment** towards the Institution under below Conditions.

b. 7 Days prior notice when lab is not installed by PHN Technology Pvt. Ltd.

c. 30 Days prior when Lab is installed.

13.3 Effect of Termination

Upon termination of this MoU, irrespective of the reason:

a. PHN shall have **full, unrestricted, and unconditional rights** to remove all equipment, software, learning kits, and other materials supplied to the Institution for the Technology Laboratory.

b. The Institution shall extend **full cooperation** to PHN for the **safe, timely, and unhindered removal** of all assets.

c. The Institution shall **not raise any claims, compensation demands, or objections** against PHN in relation to the removal of assets or cessation of operations.

d. Termination may also result from, but is not limited to:

- Misuse or unauthorized use of lab equipment or resources;
- Non-cooperation or obstruction in the operation of PHN programs;
- Damage, loss, or negligence concerning PHN assets.

e. All rights, obligations, and liabilities that have **accrued prior to termination**, including revenue sharing, confidentiality obligations, and asset protection, shall **survive termination** of this MoU.

14. INTELLECTUAL PROPERTY

a. **Ownership:** All training materials, course content, software, learning kits, methodologies, and any other intellectual property developed, supplied, or used by PHN Technology Pvt. Ltd. in connection with the Technology Laboratory or programs under this MoU shall remain the **exclusive property of PHN Technology Pvt. Ltd.**

b. **License:** The Institution is granted a **non-exclusive, non-transferable, revocable license** to use PHN's intellectual property solely for facilitating the programs and activities under this MoU, and for no other purpose.

c. **Restrictions:** The Institution shall **not copy, reproduce, modify, distribute, sell, or otherwise exploit** PHN's intellectual property in any form without prior written consent from PHN.

d. **Survival:** The provisions of this Clause shall **survive termination or expiry** of this MoU.



15. DISPUTE RESOLUTION

 a. **Amicable Settlement:** In the event of any dispute, difference, or claim arising out of or in connection with this MoU, the Parties shall first attempt to resolve the matter **amicably through mutual discussions**.

b. **Governing Law:** This MoU shall be governed by and construed in accordance with the **laws of India**.

c. **Jurisdiction:** Any dispute which cannot be resolved amicably shall be subject to the **exclusive jurisdiction of the courts located in Maharashtra, India**.

d. **No Waiver:** Failure by either Party to enforce any provision of this MoU shall **not constitute a waiver** of such provision or any other rights under this MoU.

16. GENERAL TERMS

a. **Amendments:** Any amendment, modification, or supplement to this MoU shall be made in **writing** and executed by **authorized representatives of both Parties**. No oral modification or representation shall have any effect.

 b. **Assignment:** Neither Party shall **assign, transfer, or otherwise delegate** its rights or obligations under this MoU to any third party without the **prior written consent** of the other Party. Any purported assignment without such consent shall be **void and unenforceable**.

c. **Severability:** If any provision of this MoU is held to be invalid, illegal, or unenforceable under applicable law, the remaining provisions shall continue in full force and effect.

d. **Entire Agreement:** This MoU constitutes the **entire agreement** between the Parties with respect to the subject matter herein and supersedes all prior discussions, negotiations, understandings, or agreements, whether written or oral.

e. **Counterparts:** This MoU may be executed in one or more counterparts, each of which shall be deemed an original, but all of which together shall constitute **one and the same instrument**.

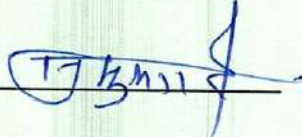
SIGNATORIES

This MoU is executed and signed by the authorized representatives of the Parties on the respective dates below:

For PHN Technology Pvt. Ltd.



Name: Nikhil Bhagat
Designation: VP Business Development

Signature: 

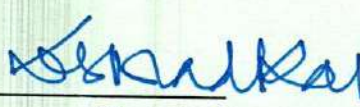
Date: _____

Seal: _____



For The Institution

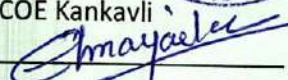
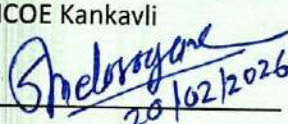
Name: Dr. Duradundi Sawant Badkar
Designation: Principal

Signature:  20/02/2026

Date: _____
Principal
S.S.P.M's College of Engg

Seal: _____

Witnesses:

1. Name: Prof. Eknath L. Manjarekar
Address: SSPMCOE Kankavli
Signature: 
2. Name: Prof. Somnath M. Melasagare
Address: SSPMCOE Kankavli
Signature:  20/02/2026



ANNEXURES

 The following annexures form an integral part of this MoU and are retained exactly as provided in the original content:

- Annexure A: Details of Technology Laboratory Setup, Hardware & Infrastructure



- **Annexure B:** Course Curriculum and Certification Programs
- **Annexure C:** Lab Operating SOP and Guidelines

All annexures shall have the **same legal force and effect** as the main body of this MoU.



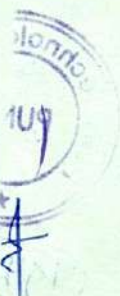
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ANNEXURE – A

Technology Lab Infrastructure & Equipment List.

The following equipment and materials shall be provided and installed by **PHN Technology Pvt. Ltd.** at the Institution premises:

Sr No	Domain	Material	Specifications	Qty
1	Robotics	AI enabled Bionic Hand kit	Controller : Arduino Nano (ATmega328P) Power Supply: 9V 2A Adapter Voltage Regulation: Onboard Nano Expansion Board with integrated 9V to 5V regulator Connectivity : Multiple servo motor channels and a dedicated port for an ultrasonic sensor Structure: 3D printed components forming the bionic hand structure	4
2	IoT + AI	AI IoT clock bot kit	Controller: ESP32 Dev Module with dual-core, 240 MHz, 520 KB SRAM, Wi-Fi + BLE Power Supply: 9V 2Amp DC input (regulated to 5V via onboard buck converter) Display Unit: P10 LED Matrix (16x32 or 16x64, single-color Red, HUB75 interface) Supports air quality, temperature, humidity, and time display using sensor modules	4
3	Automation	Advance sensor kit	The Advanced Sensor Kit includes a wide range of digital and analog sensors Including MPU6050, soil moisture sensor, BH1750, PIR sensor, RC522 RFID, MAX30102, and INA219. It's perfect for IoT, automation, and sensor-based projects	6



4	IoT + Robotics	IoT dev kit	Controller: Compatible with ESP32 (ESP-WROOM-32) Power Input: 9V 2A DC via barrel jack or screw terminal (up to 3A) Power Output: Dedicated 5V and 3.3V ports for external modules Connectivity: Labeled I2C port with SDA & SCL pins Motor Control: Integrated L293D dual H-bridge for DC/stepper motors and DRV8833 driver with built-in protections Indicators: Onboard SMD LEDs for power status IDE Compatibility: Fully compatible with Arduino IDE and similar platforms	12
5	Robotics	Robotics Starter kit	Controller: Arduino Nano (ATmega328P, 16 MHz) Power Supply: Rechargeable lithium battery with onboard charging Motion System: Servo-based pan-tilt and balancing platform Drawing Mechanism: Pen holder for basic shape drawing	6
6	Hobysist Kit	Servo Motors(MG 90), 180 Degree	Servo Motors(MG 90), 180 Degree	5
		HC-SR04 Ultrasonic Sensor with JST XH-A connector	HC-SR04 Ultrasonic Sensor with JST XH-A connector	5
		Buzzer Module(5V) with JST XH-A connector	Buzzer Module(5V) with JST XH-A connector	5
		Fevikwik	Fevikwik	5
		BreadBoard - 170 points	BreadBoard - 170 points	10
		Jumper - F-F - 30cm (Consider Single Unit)	Jumper - F-F - 30cm	50
		Jumper - M-F - 30cm (Consider Single Unit)	Jumper - M-F - 30cm	50
		Jumper - M-M - 30cm (Consider Single Unit)	Jumper - M-M - 30cm	50
		Lock Nuts - M3 - Hex	Lock Nuts - M3 - Hex	20
		SMD RGB Module with JST XH-A connector	SMD RGB Module with JST XH-A connector	8
		Standoffs - M4x30 - F-F - Plastic	Standoffs - M4x30 - F-F - Plastic	10
		Bolts - M3X10 - Allen	Bolts - M3X10 - Allen	10
		Bolts - M2X15 - Slotted	Bolts - M2X15 - Slotted	10
		Allen Key Set	Allen Key Set	6
		Hexagonal Mini Cross Wrench Sleeve Nut Tool	Hexagonal Mini Cross Wrench Sleeve Nut Tool	6
		BO Motor with 30cm wire + JST XH-A connector	BO Motor with 30cm wire + JST XH-A connector	5

 	OLED Display with JST XH-A connector 1.3 inch	OLED Display with JST XH-A connector 1.3 inch	3
	Tactile Switch Module	Tactile Switch Module	3
	26AWG Pure Copper 40pin Dupont Wire Flexible Rainbow Color Flat Ribbon Cable	26AWG Pure Copper 40pin Dupont Wire Flexible Rainbow Color Flat Ribbon Cable – 1 Meter	2
	IR Sensor Module	Detection distance: 2 ~ 30cm Detection angle: 35 ° Comparator chip: LM393	8
	Motor Driver L298N Module	Double H bridge Drive Chip: L298N. Operating Voltage(VDC): 5~35 Peak Current (A): 2 Continuous Current (A): 0-36mA No. of Channels: 2	3
	100R Resistor	1/4 Watt, CFR	50
	330R Resistor	1/4 Watt, CFR	50
	1kΩ Resistor	1/4 Watt, CFR	50
	4k7Ω Resistor	1/4 Watt, CFR	50
	1 ohm	1/4 Watt, CFR	50
	4.7 ohm	1/4 Watt, CFR	50
	10 ohm	1/4 Watt, CFR	50
	180 ohm	1/4 Watt, CFR	50
	220 ohm	1/4 Watt, CFR	50
	270 ohm	1/4 Watt, CFR	50
	470 ohm	1/4 Watt, CFR	50
	560 ohm	1/4 Watt, CFR	50
	680 ohm	1/4 Watt, CFR	50
	820 ohm	1/4 Watt, CFR	50
	2k2 ohm	1/4 Watt, CFR	50
	3k3 ohm	1/4 Watt, CFR	50
	100k ohm	1/4 Watt, CFR	50
	820k ohm	1/4 Watt, CFR	50
	1M ohm	1/4 Watt, CFR	50
	10kΩ Resistor	1/4 Watt, CFR	50
	1N4007 Diode	Maximum Repetitive Peak Reverse Voltage (VRRM): 1000V. Maximum RMS voltage (VRMS): 700V. Maximum Average Forward Rectified Current(IF(AV)): 1A.	50
	1N4148 1W Zener Diode	Maximum Repetitive Peak Reverse Voltage (VRRM): 100V. Maximum RMS voltage (VRMS): 75V. Maximum Average Forward Rectified Current(IF(AV)): 0.15A.	50
	BC547 Transistors	Product: BC547 NPN DIP Transistor Collector Current (DC) (A): 100 Junction Temperature (°C): 150 Collector-Base Voltage (Vcb) (V): 50 Collector-Emitter Voltage (Vce) (V): 45	50
	Potentiometers 10 K_knob Module	Resistance: 10k Ω. Tolerance: 20%. Shaft Length: 15mm.	10



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		Red LED	LED Model: 333-2SUGC/S400-A5-L-EVERLIGHT Color: Emerald green Package Type: 5mm	50
		Blue LED	Light Colour : Blue LED Type : 5mm	50
		Yellow LED	Size: 5mm Color: Yellow Head Shape: Round	50
		Green LED	Color: Yellowish Green Forward Voltage (V) Dimensions 5 × 2 × 1 cm	50
		5 x 7 cm Zero PCB Board Single-Sided	Dimension: 5 x 7 cm Type: Single-Sided Hole: 24 x 18(Row x column) Base Material: FR4 Copper Thickness: 1-4 OZ Board Thickness: 1.6	20
		Soldering Iron	Brand: Noel Light Weight and Offers good grip General purpose for all electronic applications. Advanced Heating element High-Quality	2
		Solder Metal 50gm	Wire Diameter: 1.0mm 60/40 Tin/Lead Solder Wire Flux: 2% SWG: 20/22 Net Weight: 50g	4
		Solder Stand	tem dimensions L x W x H 10 x 10 x 10 Centimeters Base Type Pedestal	2
		Multimeter	Digital Multimeter Small Yellow Color LCD AC DC Measuring Voltage Current, Probe Length: 60 CM (2 feet approx.)	4
		Wire Stripper	Size (mm): 130 mm Dimension (LxWxH):130 x 90 x8 Weight (g): 69	2
		Wire Cutter	Length (mm): 120 Width (mm): 60 Height (mm): 10.5 Weight (g): 50	2
		Screwdrivers (small set)	Width (mm): 51 (Body Diameter) Height (mm): 100 Weight (g): 118	3
		40 Watt Hot Melt Glue Gun with On/Off Switch + 5 Glue sticks	Voltage: 110-220V Power consumption: 40W Melt Temperature(°C): 190 (± 10) Use Glue Stick Size: 11MM	3
		Tweezers	Tweezer ESD-10	2
		Foam Double-sided tape	Colour: White Material: Foam Size: 3/4" (18mm) X 5 Mtr	3
		Insulation tape	Material Polyvinyl Chloride	3
		Cutting mat A3	lexible Cutting Mat, A3 Size (17 X 11 inch), Professional Self-Healing, 5 Layered, Durable Non-Slip PVC, Double Sided with Marked Pattern and Grids (Green) Polyvinyl Chloride	2
		Magnifying LAMP With LED	BalRama 10x Gooseneck Magnifying Lamp Desk Table Study Lamp Reading Tabletop LED Light Fisheye Zoom Lens	2
7	Prototyping	Anycubic Kobra 2 Neo 3D Printer	Brand: Anycubic 5X Fast 3D Printer: Max Speed 250mm/s 12.1L Print Size: 250*220*220mm Automatic Leveling: Upgraded Printing Volume: 3.2gal./12.1L Machine Weight: 7.3 Kg	1
		Blue filament	Material: PLA Filament Diameter: 1.75mm Brand Name: eSUN Net weight: 1Kg Elongation at Break (%): 8 Flexural Modulus (MPa):3600	2
8	Mechanical kit	Drill Machine	680W Impact Drill (ID6808) : 220-240V~50/60Hz,13mm key chuck	1



		Wood Drill bits	Wood Drill bits 4,5,6,8mm	1
		Twist Drill bits	Twist Drill bits 2,3,4,5,6mm	1
		Masonry Drill bits	Masonry Drill bits 4,5,6,8,10mm	1
		Hammer	8Oz Claw Hammer	1
		Measurment Tape	3M Steel measuring tape	1
		Plyer	7" Combination Pliers & 1 Pcs 6" Adjustable Wrench	1
		Wrench	Adjustable Wrench	1
9	Trainer Support kit	Multimeter	Digital Multimeter Small Yellow Color LCD AC DC Measuring Voltage Current, Probe Length: 60 CM (2 feet approx.)	1
		Wire Stripper	Size (mm): 130 mm Dimension (LxWxH):130 x 90 x8 Weight (g): 69	1
		Wire Cutter	Length (mm): 120 Width (mm): 60 Height (mm): 10.5 Weight (g): 50	1
		Screwdrivers (small set)	Width (mm): 51 (Body Diameter) Height (mm): 100 Weight (g): 118	1
		Blade cutter	Auto-locking blade Large button for easy extension & retraction of blade Blade storage tray Blade size- 100x18mm	1
10	Safety kit	First Aid Kit	First Aid Kit	1
		Safety Goggles	Safety Goggles	10
		Safety Gloves	Safety Gloves	10
11	Product development	CNC Plotter	Controller: Arduino Uno (GRBL firmware) Input Interface: G-code via USB Software Support: Inkscape (G-code extension) / Universal G-code Sender Power Supply: 9V DC, 2A-5A Working Area: A4 Size (210 mm × 297 mm) Axes: 2-Axis (X and Y) Drive System: NEMA 17 Stepper Motors Motor Drivers: A4988 Stepper Drivers Project converts digital designs into precise pen plots	1
12	Product development	EVM	Controller: Arduino Nano Display Interface: 20x4 I2C LCD (HMI) PCB: Custom PCB with onboard voltage regulation Connectivity: Dedicated ports for I2C and RFID module Access Module: RFID reader for secure user authentication Alert System: Buzzer for status indication and alerts Power Supply: 9V DC (2A) Secure RFID-based voting, real-time LCD feedback, buzzer alerts for actions, and tamper-resistant operation.	1
13	Mechanical	3 Speed Gearbox	Manual Gear Shifter Mechanism Main Components: 3D Printed Gearbox Housing and Gears Motor: 60 RPM BO Motor (DC Gear Motor) Gear System: 3-Speed Manual Transmission Speed Control: Mechanical gear shifting for RPM variation Power Supply: Rechargeable Battery Pack (6V-12V DC) Drive Output: Variable RPM output to wheel based on gear Material: PLA/ABS for 3D printed parts	2



14	Drone	Drone Mechanism Working Trainer Kit	Motors: 920KV BLDC Motors with 1045-size propellers Flight Controller: Radiolink Crossflight for stable flight dynamics Remote Control: FS-CT6B Transmitter & Receiver Power Module: APM module for voltage & current monitoring Battery: 11.7V LiPo with LiPo balance charger Sensors: MPU6050 (vibration/orientation) and Load Cell (thrust measurement) Display: Real-time dashboard for voltage, current, and sensor data Demonstrates real-time drone thrust, vibration, and orientation analysis for hands-on flight training and STEM learning.	1
15	AI ML	AI-SWAM Robotics Setup	Vision System: Wide-angle camera (120° FOV) with OpenCV-based object detection Arm Mechanism: Dual 180° servo arms (2 DOF) for smooth object interaction Targeting System: Dual laser modules for precise object highlighting Lighting System: RGB light-based cabins for environmental simulation Control: Custom PCB with voltage regulators, switches, and rotary knobs Power Supply: SMPS module for stable and safe operation Performs real-time object detection, tracking, and interaction with dynamic lighting and laser targeting for advanced AI simulation.	1
16	AI ML	AI Voice And Vision KIT	Processor: Raspberry Pi 4B for real-time AI processing Camera: High-resolution module for computer vision tasks Audio: Integrated speaker for voice interaction and output AI Capabilities: Supports object recognition, facial detection, and voice commands Connectivity: Includes HDMI cable for display interface Applications: Ideal for AI automation, vision systems, and voice-controlled IoT Executes real-time image recognition and voice commands for smart AI-powered interaction and automation.	1
17	Automation	Multi sensor Calibration And Testing KIT	Controller: Arduino Mega 2560 (ATmega2560, 16 MHz) Power Input: 9V @ 2A DC via barrel jack Voltage Rails: 9V, 5V (regulated), and 3.3V Display (HMI): 20x4 I2C LCD Character Display User Input: Tactile buttons – UP / DOWN / SELECT / BACK PCB: Dual-layer FR4 with silk-screened labels and 2.54mm headers Provides a complete LCD-based user interface with menu navigation and multi-voltage support for embedded applications.	1
18	Applied learning - AI + Robotics	Advance Robotic hand	Processor: Raspberry Pi 4B for AI and vision processing Camera: HD camera for real-time image recognition AI Capabilities: Supports color detection and face recognition via OpenCV Machine Learning: Compatible with TensorFlow + Keras for training custom models Control Interface: Mobile app for wireless operation and interaction Performs real-time AI-based object recognition and responds through wireless control using a mobile app.	1



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19	Applied learning - Robotics	Self Balancing robot	Working Voltage & Current: 9V DC, 2A Motor Type: Precision 9V DC motors Position Detection: MPU-6050 (Gyroscope + Accelerometer) Control Mode: HC-06 Bluetooth wireless communication Operation: Controlled via smartphone using Bluetooth Automatically maintains balance and responds to smartphone-based Bluetooth commands in real time.	1
20	Applied learning - AI + Robotics	Advance DOF Robotic Arm	Dimensions: 293 × 153 × 426 mm Weight: 1.28 kg Material: Full aluminum alloy chassis, sandblasted and anodized Degrees of Freedom: 5 DOF + gripper Power Supply: 7.5V 6A DC adapter Controller: ESP32 + MM32F103CBT6 (dual-core architecture) Programming Support: Scratch, Python, Arduino Servo Motors: HTS-16L / HX-06L / LX-15D / LX-225 (smart serial bus servos) Control Modes: Mobile app (iOS/Android), PS2 controller, PC control Performs precise multi-axis movements and gripping actions with mobile, PC, and controller-based operation	1
21	Applied learning - AI + Robotics	Shwana	Controller: ESP32 Servos: 8 high-speed coreless servo motors Expansion Ports: Compatible with ultrasonic, IMU, and other sensors Technologies: Inverse kinematics for agile and precise movement Programming Support: Python, Scratch, and Arduino Applications: Ideal for robotics research, AI motion simulation, and education Executes precise, human-like movements using inverse kinematics and sensor-driven control.	1
22	MISC.	Wifi Camera	1080P Wifi 360Degree camera	1

ANNEXURE – B

List of Courses & Programs

PHN Technology Pvt. Ltd. shall conduct the following indicative courses at the Technology Lab:

The following minimal and student-friendly fee structure shall be applicable for courses and programs conducted by PHN Technology Pvt. Ltd. in the Technology Lab.



A. Kit Based Camp/ Courses: These are Programs with Take away kits.

Kit Name	1 Month Program Price, on given take away Kit	Activities	Technological Domain
Football Drone Learning Kit	₹17,560/- per student	Automatic Temperature-Controlled Fan	Automation Embedded Systems Drone technology
		Automatic Night Lamp (LDR-Based)	
		Intruder / Obstacle Detection Alarm	
		Light-Activated Buzzer (Light Alarm)	
		Touch-Based Conductor–Insulator Detector	
		Air-Drag Propeller Boat	
		Automatic Object-Triggered LED Indicator (IR Sensor)	
Wooden Gearbox & Digital Control Systems Kit	₹10,900/- per student	Activities	Mechatronics & Mechanical Systems Embedded Systems Automation
		Arduino LED Blink & Control Program	
		IR-Based Object Detection Indicator (Arduino)	
		IR-Based Counter (Serial Monitor Output)	
		Arduino Switch-Controlled LED System	
		IR Sensor Data Monitor (Serial Output)	
		Arduino Motor ON/OFF Control Logic	
		IR-Based Motor Trigger Logic	
Wooden Solar Powered Car & Energy Learning Kit	₹6,125/- per student	Activities	Renewable Energy & Sustainable Systems
		Solar Powered LED Light	
		Solar Powered Buzzer Alarm	
		Solar Powered Dual-Shaft Motor Demo	
		Battery Powered Motor Demonstration Model	
Wooden Mechanical Robot & Motion	₹3,400/- per	Activities	Mechatronics &
		Two-Button Forward–Reverse MDF Car	
		Magnetic Object Carrier Car	



Learning Kit	student	Magnet Powered Car	Mechanical Systems
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B. Short Term Certification Courses (30–40 Hours)

A. Certification Courses (30–40 Hours)		
Domain	Course Duration	Fee per Student
AI /ML	30 Hours	₹ 1500
Python Programming for AI	40 Hours	₹ 1500
Data Analytics	30 Hours	₹ 1500
IoT Fundamentals	30 Hours	₹ 1500
Robotics Basics	30 Hours	₹ 1500
Embedded Systems Basics	40 Hours	₹ 2000

C. Advanced Domain Courses (60–80 Hours)

B. Advanced Domain Courses (60–80 Hours)		
Domain	Duration	Fee per Student
Machine Learning with Projects	80 Hours	₹ 5,500
Industrial IoT	60 Hours	₹ 5,000
Advanced Robotics	80 Hours	₹ 6,000
Drone Technology	60 Hours	₹ 5,500

D. Project-Based Programs (Capstone Model)

C. Project-Based Programs (Capstone Model)		
Program Type	Duration	Fee
Mini Project Development	4 Weeks	₹ 3,000
Major Project Development	8 Weeks	₹ 5,000



ANNEXURE – C

Operational Guidelines & Standard Operating Procedures (SOP)

1. Lab Timings

- Lab shall operate as per mutually agreed schedule.
- Batch timings shall be decided by PHN in coordination with the Institution.

2. Student Enrolments Process

- PHN shall conduct orientation sessions.
- Interested students shall register directly with PHN.
- All fees shall be paid to PHN through authorized channels only.

3. Access to Infrastructure

- Institution shall provide uninterrupted access to the lab.
- Electricity, internet, and basic facilities shall be ensured by the Institution.

4. Maintenance Responsibility

- Routine maintenance: PHN
- Security and safety: Institution

5. Promotion & Coordination

The Institution shall support PHN with:

- Student communication
- Notices and circulars
- Classroom announcements
- Permission for seminars and workshops

