

PSN College of Engineering and Technology (Autonomous)



Melathediyoor, Tirunelveli - 627 152, Tamil Nadu.

Approved by AICTE and Affiliated to Anna University

Accredited by NAAC with A+ Grade in 3rd Cycle and Recognized by UGC under Section 2(f) and 12(B)

NBA Accredited courses B.E. (MECH, EEE & CSE)

An ISO 9001 : 2015 Certified Institution

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Quotation Ref. No: PSNCET/IDEALAB/TENDER/03

Date: 09.12.2025

Call for Quotation

Sealed tenders are invited from reputed and experienced suppliers, manufacturers, or authorized distributors for the **supply, installation, and commissioning of equipment, tools, and machines** for setting up an **AICTE IDEA Lab** at our institute. The laboratory is to be developed as per the AICTE guidelines for promoting innovation, design thinking, and prototyping skills among students and faculty. The detailed specifications of the required items are enclosed with this document.

Sr. No	Equipments	Preferred brands if any	Specifications	Qty
1	PCB Milling Machine	Branded Company Product with at least three years product warranty	Cutable Materials: Modeling Wax, Chemical Wood, Foam, Acrylic, Poly Acetate, ABS, PCB, Copper glad, etc Table Size: 225 (X) × 150 (Y) mm or more Drive System: Stepping Motor (X, Y, Z Axis) Operating Speed: 800 mm/min Software Resolution: 0.01 mm/step Position accuracy : 0.01 to 0.02 mm Max Travel Speed (mm/sec)-58 (2.28") Drilling (mm)-0.2 -3.175 (8-125 mil) Maximum Drilling Cycles/ Min-50 Spindle Motor: DC Motor Type 380 or More Spindle Speed: Adjustable 20,000 and above rpm or more Tool Chuck Type: Collet Interface: USB or cable Control Commands: RML-1, NC code Power Supply: DC 24V, 2.5A (via AC 100–240V, 50/60Hz adapter) Power Consumption: Approx. 50 W or more	1
2	Digital multimeter	Branded Company Product with at least three years product warranty	Display Count: Up to 4000 DC Voltage Range: Up to 1000 V AC Voltage Range: Up to 1000 V DC Voltage Accuracy: ±0.5% or ±3 digits, whichever is higher AC Voltage Accuracy: Within ±1% + 3 digits DC Current Measurement: Up to 10 A AC Current Measurement: Maximum 10 A DC Current Accuracy: ±1.5% + 3 digits (approximate) AC Current Accuracy: ±1.5% + 3 digits	5

			<p>(typical)</p> <p>Resistance Measurement: Up to 40 MΩ</p> <p>Resistance Accuracy: Estimated at $\pm 1.5\%$ + 3 digits</p> <p>Capacitance Measurement: Up to 1000 μF</p> <p>Capacitance Accuracy: $\pm 5\%$ or ± 5 digits</p> <p>Operating Temperature Range: From 0°C up to approximately 40°C</p> <p>Storage Temperature Range: Between -30°C and 60°C</p> <p>Overall Dimensions (H×W×L): Approximately 183×91×49.5 mm</p> <p>Unit Weight: Around 455 grams</p> <p>Safety Compliance: As per IEC 61010-1 & IEC 61010-2-030 standards, suitable for CAT III 600V and CAT II 1000V environments with Pollution Degree 2 classification</p>	
3.	Mixed Signal Oscilloscope	<p>Branded Company Product with at least three years product warranty</p>	<p>Bandwidth: Up to 100 MHz</p> <p>Analog Channels: 4 or more</p> <p>Real-Time Sampling Rate: Maximum 1 GSa/s per channel</p> <p>Memory Depth: 10 Mpts per channel</p> <p>Waveform Update Rate: Approximately 120,000 wfms/s</p> <p>Vertical Resolution: 8 bits</p> <p>Vertical Scale: Ranging from 1 mV/div to 10 V/div</p> <p>Horizontal Scale: Spanning 1 ns/div to 100 s/div</p> <p>Spectrum Analyzer Frequency Range: DC to 500 MHz</p> <p>FFT Points: Up to 1M points for enhanced frequency domain resolution</p> <p>Waveform Math Functions: Includes addition, subtraction, multiplication, division, minimum, maximum, root, square, absolute, inverse, derivative, integral, and low-pass filter</p> <p>Trigger Types: Edge, Pulse Width, Video, Pulse Runt, Rise & Fall (slope), Alternate, Timeout, Event-Delay, Time-Delay, and Bus</p> <p>Arbitrary Waveform Generator (AWG): Dual-channel, 25 MHz, supporting various waveforms such as sine, square, pulse, ramp, DC, noise, sinc, Gaussian, Lorentz, exponential rise/fall, haversine, and cardiac</p> <p>AWG Sample Rate: 200 MSa/s</p> <p>AWG Vertical Resolution: 14 bits</p> <p>Display: 8-inch WVGA TFT LCD (800 × 480 pixels)</p> <p>Data Logging Capability: Up to 1000 hours</p> <p>Segmented Memory: Supports up to 29,000 segments for efficient waveform storage and retrieval</p> <p>Connectivity: USB 2.0 (host and device), Ethernet (RJ45), and Go-NoGo BNC</p> <p>Dimensions (W × H × D): 380× 200× 125 mm or above</p> <p>Weight: 2 Kgs or above</p> <p>Safety Compliance: Conforms to IEC 61010-1 and IEC 61010-2-030 standards, suitable</p>	1

			for CAT III 600V and CAT II 1000V environments with Pollution Degree 2 classification	
4	Digital Oscilloscope	Branded Company Product with at least three years product warranty	<p>analog inputs</p> <p>Memory Record Length: Up to 10 Mpts for extended waveform capture</p> <p>Bandwidth Limiting: Selectable 20 MHz bandwidth filter</p> <p>Sampling Rate: Maximum of 1 GSa/s real-time equivalent per channel</p> <p>Rise Time: ≤ 3.5 ns depending on probe and settings</p> <p>Display: 7" TFT color LCD with 800×480 resolution</p> <p>Time Base Range: From 5 ns/div to 100 s/div, user-adjustable</p> <p>Vertical Resolution: 8-bit digital resolution</p> <p>Trigger Modes: Automatic, Normal, and Signal-dependent triggering</p> <p>Maximum Input Voltage: 300 Vrms (within safety limits)</p> <p>Input Sensitivity: Within the range of 1 mV/div to 10 V/div</p> <p>Input Coupling Options: Selectable among AC, DC, and Ground</p> <p>Trigger Coupling Modes: Configurable as AC, DC, High-pass, or Low-pass</p> <p>Physical Dimensions: Approximately 350 × 200 × 120 mm or above</p> <p>Unit Weight: 2.5 kg or above</p> <p>Input Impedance: Nominal 1 MΩ// 16 pF</p> <p>Measurement Capabilities: Equipped for automatic parameter extraction, background noise filtering, and AUTOSET configuration for display scaling (time base/gain)</p> <p>Protocol Decoding Support: Capable of analyzing I2C, SPI, UART, CAN, and LIN communication protocols</p> <p>Standard Accessories: Includes mains power cable, user manual (digital format), and one GTL-16E probe per input channel</p>	1

5.	Power supply	<p>Branded Company Product with at least three years product warranty</p>	<p>Output Configuration: 4-channel design with independent electrical isolation across all outputs</p> <p>Channel Output Ranges:</p> <ul style="list-style-type: none"> • CH1 & CH2: Adjustable output voltage from 0 to 32V with a current delivery capacity up to 3A • CH3: Variable range 0 to 5V supporting up to 1A • CH4: Output adjustable from 0 to 15V with a load current of up to 1A <p>Constant Voltage Operating Mode Line Regulation: $\leq 0.01\% + 3 \text{ mV}$ (approximate value within rated voltage range) Load Regulation: $\leq 0.01\% + 3 \text{ mV}$ (across rated load variation) Ripple & Noise: $\leq 1 \text{ mVrms}$ across full bandwidth</p> <p>Constant Current Operating Mode Line Regulation: $\leq 0.2\% + 3 \text{ mA}$ Load Regulation: $\leq 0.2\% + 3 \text{ mA}$ Ripple Current: $\leq 3 \text{ mArms}$ (typical)</p> <p>Safety & Operational Features Output Control: Independent output ON/OFF switching functionality is required Voltage Resolution: Approximately 100 mV (*1) Current Resolution: Approximately 10 mA (*1)</p> <p>Display Parameters Display Units: Four separate displays required for individual channel status visualization Display Type: 4.3-inch LCD (color or monochrome as applicable)</p> <p>Functional Features Tracking Operation: Supported (required for synchronizing output behavior) Auto Series/Parallel: Supported (automatic internal reconfiguration required)</p> <p>Power Requirements Supply Input: 230V AC $\pm 10\%$, 50 Hz</p> <p>Mechanical Specifications Maximum Dimensions (W \times H \times D): Within 200 mm \times 100 mm \times 200 mm Maximum Weight: 10 kg or less</p>	1
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6.	Function Generator	<p>Branded Company Product with at least three years product warranty</p>	<p>Output Function: The equipment shall provide output waveforms including sine, square, triangle, and TTL signals as required.</p> <p>Frequency Range: For sine and square waveforms: approximately 0.1 Hz up to 3 MHz. For triangle waveform: approximately 0.1 Hz up to 1 MHz.</p> <p>Frequency Resolution: Frequency resolution shall be maintained within a maximum of 0.1 Hz.</p> <p>Frequency Stability: The frequency stability shall be within ± 20 ppm (parts per million).</p> <p>Frequency Accuracy: The frequency accuracy shall be maintained within ± 20 ppm.</p> <p>Frequency Aging: Frequency aging shall not exceed ± 5 ppm per annum.</p> <p>Amplitude Range: Output amplitude shall be up to 10 V peak-to-peak (Vp-p) into a 50 Ω load.</p> <p>Amplitude Accuracy: Amplitude accuracy shall be within $\pm 20\%$ at maximum amplitude setting.</p> <p>Output Impedance: Nominal output impedance shall be 50 Ω with a tolerance of $\pm 10\%$.</p> <p>Attenuator: A single-step attenuator of -40 dB ± 1 dB shall be provided.</p> <p>Display: A 6-digit LED display shall be incorporated for parameter indication.</p> <p>Output Control: Output shall be controlled via an ON/OFF selector switch.</p> <p>Power Source: The device shall operate on an AC supply of 240 V, 220 V, or 110 V $\pm 10\%$, with frequency 50/60 Hz.</p> <p>Ambient Operating Temperature: Normal operation shall be ensured within the ambient temperature range of 0 $^{\circ}$C to 40 $^{\circ}$C.</p> <p>Dimensions: Maximum dimensions shall not exceed 255 mm (W) \times 95 mm (H) \times 295 mm (D).</p> <p>Weight: Maximum device weight shall be within 2.5 kg.</p>	1
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7.	Non-Contact Voltage Tester	Branded Company Product with at least three years product warranty	<p>Function: Non-contact AC voltage detection tester.</p> <p>Voltage Detection Range: Approximately 90 V to 1000 V AC.</p> <p>Detection Method: Capacitive, with visual and audible indication.</p> <p>Sensitivity: Adjustable sensitivity for different voltage ranges.</p> <p>Response Time: Instantaneous detection within standard operating conditions.</p> <p>Indicators: Bright LED indicators and audible beep for voltage presence.</p> <p>Operating Environment: Suitable for use in ambient temperatures from 0 °C to 40 °C. Power Source: Powered by standard batteries (typically 2 × AAA or equivalent).</p> <p>Safety Standards: Complies with IEC/EN 61010-1 CAT III 1000 V safety standards.</p> <p>Dimensions: Compact, handheld design suitable for field use (approx. 150 mm × 30 mm × 25 mm).</p> <p>Weight: Lightweight, approximately 150 g for ease of portability.</p>	
8.	LCR Meter	Branded Company Product with at least three years product warranty	<p>Display: Approximately 2.8" TFT touch LCD screen.</p> <p>Resolution: 25,000 or above counts resolution on both primary and secondary displays.</p> <p>Basic Accuracy: Within $\pm 0.2\%$ under standard conditions.</p> <p>Test Frequencies: Six or eight selectable frequencies depending on model variant.</p> <p>Measurement Combinations: Up to 15 different measurement combinations available.</p> <p>Test Level: Selectable AC test levels approximately 0.3 V, 0.7 V, and 1 V rms; DC test level selectable at ± 1 V.</p> <p>Measurement Speed: Selectable measurement speeds of approximately 10 measurements per second (fast) and 2.5 measurements per second (slow).</p> <p>Auto LCR Mode: Automatic identification and measurement of component types within supported ranges.</p> <p>Data Hold: Feature available to hold measured data on display.</p> <p>Interface: USB virtual COM port provided for remote communication capabilities.</p> <p>Software: Datalogging software available for data capture and analysis.</p>	1

9.	Bench Top Multimeter	Branded Company Product with at least three years product warranty	<p>AC Voltage (True RMS): Range: 500 mV to 1000 V across 5 ranges. Accuracy: $\pm(0.5\% - 5\% \text{ rdg} + \text{digits})$ depending on frequency and range. Input impedance: 10 MΩ.</p> <p>DC Current: Range: 500 μA to 20 A across 6 ranges. Accuracy: $\pm(0.02\% - 0.3\% \text{ rdg} + 2 \text{ digits})$ depending on range.</p> <p>AC Current (True RMS): Range: 500 μA to 20 A across 6 ranges. Accuracy: $\pm(0.5\% - 1\% \text{ rdg} + \text{digits})$ depending on frequency. Resistance: Range: 500 Ω to 20 MΩ across 6 ranges. Accuracy: $\pm(0.1\% - 0.3\% \text{ rdg} + \text{digits})$ depending on range.</p> <p>Diode Test: Max forward voltage 1.5 V, open voltage 2.8 V.</p> <p>Capacitance: Range: 5 nF to 50 μF. Accuracy: $\pm(2\% \text{ rdg} + 4 \text{ digits})$.</p> <p>Frequency: Input level varies by range; functions include Auto/Manual Range, Max, Min, dBm, Rel, Hold.</p> <p>Continuity Beep: Threshold $<5 \Omega$.</p> <p>Display: Dual 7-segment LED, 0.4" and 0.5".</p> <p>Power Source: AC 100/120/230 V $\pm 10\%$, 50/60 Hz.</p> <p>Dimensions & Weight: Approximately 251 \times 91 \times 291 mm; 2.6 kg.</p>	1
10.	Soldering Rework Station	Branded Company Product with at least three years product warranty	<p>Soldering Iron Power: Up to approximately 60 W output power with temperature adjustable within approximately 200 $^{\circ}$C to 480 $^{\circ}$C range. Heating Element: Needle bit with MCH heater providing rapid heat-up and stable temperature control within $\pm 2^{\circ}$C.</p> <p>Hot Air Blower Power: Up to approximately 500 W output power with temperature adjustable within approximately 200 $^{\circ}$C to 450 $^{\circ}$C range, multiple nozzles included.</p> <p>Hot Air Features: Auto-pause function on placement in cradle, airflow adjustable within operational limits.</p> <p>DC Power Supply: Provides output voltage approximately 15 V up to 2 A maximum current plus 5 V USB output for auxiliary power.</p> <p>Control: Microcontroller-based system with LED indicators for temperature and mode selection.</p> <p>Safety: ESD-safe design compliant with applicable standards.</p> <p>Build: Metallic body with powder coating, approximate dimensions 280 mm \times 180 mm \times 140 mm (W \times H \times D).</p> <p>Weight: Approximately 3.5 kg.</p> <p>Power Source: AC 220 V $\pm 10\%$, 50/60 Hz.</p> <p>Accessories: Includes soldering iron with needle bit, hot air blower with 3 nozzles, iron stand with sponge, hot air cradle, patch cord, and power cord.</p> <p>Operating Temperature: Suitable for ambient temperature approximately 0 $^{\circ}$C to 40 $^{\circ}$C</p>	1

Terms and Conditions

The following Terms and Conditions apply to all bidders participating in the tender for the supply, installation, and commissioning of equipment, tools, and machines for the establishment of an AICTE IDEA Lab. All prospective vendors are required to read and comply with these terms in their entirety.

1. General Information

All equipment and materials must be delivered in the quantities and specifications mentioned in the purchase order issued by the purchaser. The delivery location will be specified in the purchase order **(PSN College of Engineering and Technology, Melathediyoar, Tirunelveli - 627152)**. The entire contract shall remain valid for a period of three (3) months from the date of the award.

Quotations submitted by bidders must remain valid for a minimum of 90 days from the final date of submission. Any quotation that does not meet with this validity period will be considered non-compliant.

2. Bid Submission Guidelines

Bids may be submitted either via email (digitally signed) or in hard copy form, as specifically mentioned in the tender notice. All quotations must be printed on the bidder's official letterhead and duly signed by an authorized representative.

Each bid must be complete in all respects and must include the following mandatory documents:

- Detailed Profile of the Bidder, highlighting experience and key competencies.
- Copy of the Company/Firm Registration Certificate.
- Copy of valid GST Registration Certificate.
- Copy of submitted GST return (at least up to November 2024).
- Copy of valid PAN Card.
- Chartered Accountant's Certificate for turnover for FY 2021–22, 2022–23, and 2023–24.
- CA-certified and audited Balance Sheets and Financial Statements (Form 3CB/3CA) for the last three financial years.
- Copies of Work Completion or Experience Certificates of similar completed works.
- Valid Shop Establishment License or Factory License.
- Genuine Manufacturer Authorization Form (MAF), which will be subject to verification with the respective OEM.
- Bidder should provide an Escalation Matrix for service and after sales support.
- Valid EPF, ESIC, and Professional Tax Registration Certificates (where applicable).
- Income Tax Return Acknowledgements for FY 2021–22, 2022–23, and 2023–24.
- Declaration/Affidavit (on ₹500/- Stamp Paper) regarding no blacklisting from IITs/NITs/Govt. Offices/PSUs/Autonomous Bodies.

- Complete, signed, and stamped tender document including amendments and deviation sheets, if any (to be uploaded online only).
- Declaration of agreed specifications on company letterhead, duly signed and stamped.
- Any other documents in support of technical eligibility.

All bidders are required to quote for all the items listed in the BoQ. Partial or item-wise quotations will be summarily rejected. Each bidder is allowed to submit only one quotation per package; multiple submissions from a single bidder will lead to disqualification.

3. Technical Documentation and Compliance

The bidder must furnish complete technical documentation for each quoted item. This includes detailed product specifications, installation manuals, operation and maintenance manuals. The bidder is also required to submit a layout/design proposal aligned with the lab setup requirements, highlighting compliance points against the tender specifications.

Original technical brochures or scanned versions of product catalogs should be submitted with the bid. Wherever available, URLs to the OEM's official product page should also be provided for cross- verification.

Each bidder must clearly mention the make, model, and complete technical specifications for the equipment being offered. A compliance sheet responding to each technical requirement outlined in the tender must be prepared and duly signed.

4. Eligibility and Qualification Criteria

All bidders must be OEMs or authorized partners/distributors with valid authorization for the products they are quoting. Authorization letters must be submitted on the OEM's official letterhead.

Bidders must demonstrate relevant experience by submitting a minimum of three Purchase Orders (executed within the last five years) for similar equipment supplied to academic, R&D, or industrial institutions. A list of at least five institutional clients (with contact information) must be provided as a reference.

It is mandatory that the bidder or OEM has a registered support office in India to provide warranty and after-sales support. In the case of imported equipment, either the OEM or their authorized seller must submit a certificate confirming the presence of such a service support facility in India.

The OEM must also submit a declaration confirming the availability of spare parts for the quoted products for a minimum of one year and authorize the bidder to participate in the tender.

5. Financial Criteria

Each bidder must have an average annual turnover of ₹5 Crores or more over the last three financial years (FY 2022–23, 2023–24, 2024–25). The turnover must be supported by a CA certificate or audited financial statements.

Prices quoted must be inclusive of all taxes (GST, customs, etc.), transportation, packaging, insurance, unloading, installation, commissioning, and training charges. There shall be no extra claim under any circumstances after the finalization of the bid.

The quoted prices must be firm and fixed throughout the duration of the contract. No escalation in price will be allowed under any pretext.

6. Evaluation and Award of Contract

All bids will be evaluated on the basis of compliance with the technical specifications, completeness of submitted documentation, financial eligibility, and price competitiveness. The contract shall be awarded to the bidder whose offer is determined to be technically responsive and lowest in cost.

The purchaser reserves the absolute right to reject any or all bids without assigning any reason. The final decision on selection will be at the sole discretion of the purchaser and shall be binding on all parties.

7. Warranty and After-Sales Service

All equipment must carry a minimum onsite warranty of at least **three years** from the date of successful installation and commissioning. During this warranty period, the bidder shall repair or replace any defective items at no additional cost to the purchaser. All associated transportation, testing, and labor costs shall be borne by the bidder.

In case of any service delay or failure to resolve issues during the warranty period, the purchaser reserves the right to invoke penalties or reject future business from the vendor.

8. Payment Terms

Payment shall be released only after the successful supply, installation, and commissioning of the equipment. Final inspection and acceptance will be carried out by the purchaser's technical committee.

No payment shall be made for equipment that is received in damaged condition, is non-functional, or fails to meet the required specifications. The bidder must submit all necessary documentation (delivery challans, installation report, warranty documents, training certificate, invoice, etc.) to process payment.

9. Other Conditions

No bidder shall be given preference based on category, class, or affiliation. The procurement may be extended to additional phases (e.g., Phase II) depending on the availability of funds and institutional requirements.

Delayed delivery or installation may result in cancellation of order or imposition of penalties, as deemed fit by the purchaser. The scope of the supply and service must be entirely as per the BoQ and technical specifications. Bids with partial compliance or deviations shall not be entertained.

10. Bidder Undertaking

The bidder shall furnish an Undertaking Certificate on its official letterhead, duly signed by an authorized representative, certifying that all equipment and materials supplied to **PSN College of Engineering and Technology, Tirunelveli** for the AICTE IDEA Lab are **neither manufactured in nor procured from China or Pakistan.**

The Undertaking Certificate must include the following declarations:

- All items are sourced from verified manufacturers located outside China and Pakistan.
- The bidder complies fully with the Government of India and AICTE procurement guidelines regarding country of origin.
- The bidder accepts that any breach of this undertaking will render the supply contract liable for cancellation and may attract penalties as per prevailing regulations.
- This certificate shall form an integral part of the bid submission and the final contract.

11. Submission Deadline and Contact Details

All quotations must be submitted **within two weeks** to the email ID **aicteidealab@psncet.ac.in** and sent in hard copy of quotation to:

Dr. P. Selvakumar, Ph.D.

AICTE IDEALAB PROJECT CO-ORDINATOR

PSN COLLEGE OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS),

MELATHEDIYOOR,

TIRUNELVELI – 627152

TAMILNADU, INDIA

Contact: S. Ananth & 9092585350

Email: aicteidealab@psncet.ac.in, ananthakanna@gmail.com


Project Co-Ordinator

Dr. P SELVAKUMAR M.E. Ph.D.

EXECUTIVE DIRECTOR

PSN COLLEGE OF ENGINEERING & TECHNOLOGY

MELATHEDIYOOR, PALAYAMKOTTAI TALUK

TIRUNELVELI DIST - 627 152