অসম দক্ষতা বিশ্ববিদ্যালয়
Assam Skill University
(A State University established under Assam Act No. IX of 2020)
[Recognised Under Section 2(f) of the UGC Act, 1956]
[AICTE Approved Id – 1-44753529533 and HEI Code - U-1372]

Ref. No.: ***ASU/ECE/F5/2025-26/003*** **Date: 09/06/2026**

Commencement of Internship Programme and List of Shortlisted Candidates

Department of Electronics and Communication Engineering

Assam Skill University

This is to notify all concerned that the following candidates have been shortlisted for the Internship Program to be conducted by the Department of Electronics and Communication Engineering, School of Technology, Assam Skill University.

The internship program will commence on **01 July 2026 (Wednesday).** All shortlisted candidates are required to report at the following venue on the scheduled date and time as communicated by the concerned department.

Venue: 1st Floor, Block E, Assam Skill University, Mangaldai, District Darrang, Assam – 781125

Time: 8:30 AM

Shortlisted Candidates for the Internship on Semiconductor Assembly and Testing

Sl. No.	Name	Institution
1.	Hirakjyoti Bayan	Bhattadev University
2.	Dristi Rekha Sarma	Bhattadev University
3.	Biswajit Talukdar	Bhattadev University
4.	Sudarshana Kalita	Bhattadev University
5.	Parinita Ray	Bhattadev University
6.	Uddipan Patgiri	Bhattadev University
7.	Khanjan Choudhury	Bhattadev University
8.	Swastik Priyam Boruah	Rajiv Gandhi Institute of Petroleum Technology
9.	Mrinangku Barman	Jorhat Engineering College
10.	Md Anish	Manipur Institute of Technology
11.	Leitanthem Alex	Manipur Institute of Technology
12.	Maisnam Pravin Singh	Manipur Institute of Technology

13.	Laikhuram Rahul Singh	Manipur Institute of Technology
14.	Mohammad Ashif	Manipur Institute of Technology
15.	Platina Konsam	Manipur Institute of Technology
16.	Chithung Sorin	Manipur Institute of Technology
17.	Sinam Robertson Singh	Manipur Institute of Technology
18.	Elangbam Monash Singh	Manipur Institute of Technolony
19.	Thiyam Gaiytri	Manipur Institute of Technology

Shortlisted Candidates for the Internship on PCB Design and IoT

Sl. No.	Name	Institution
1.	Koustavmoni Khataniar	Morigaon College
2.	Raj Pallab Majumdar	Morigaon College
3.	Hirak Jyoti Raja	Morigaon College
4.	Bikash Kumar Deka	Morigaon College
5.	Sandip Nandi	North Lakhimapur University
6.	Hrishikesh Das	Bhattadev University
7.	Afrid Zaman	Bhattadev University

For any queries, candidates may contact the following persons.

For Internship in Semiconductor Assembly and Testing
Dr. Himangshu Jyoti Gogoi (+91-8133966779), Dr. Julaiba Tahsina Mazumder (+91-9401385069)

For Internship in PCB Design and IoT
Dr. Himadri Duwarah (+91-8638989152), Dr. Farhana Begum (+91-9706767077)

for 11/06/2026

Prof. (Dr.) Sunandan Baruah
Head of Department
Dept. of Electronics and Communication Engineering
Assam Skill University

HoD
Department of Electronics
Assam Skill University

Copy To:

1. PS to Hon'ble Vice Chancellor, ASU
2. PS to Registrar, ASU
3. Dean Academics
4. Programme cum System Analyst, ASU
5. Department Notice Board
6. Office File

Weekly Schedule for
Internship in Semiconductor Assembly and Testing

Week 1: Semiconductor Fundamentals
Introduction to Semiconductor Industry, Semiconductor Manufacturing Flow, Front-end vs Back-end Processes, Semiconductor Physics, Doping, PN Junction, Diodes, BJT and MOSFET Fundamentals
Week 2: Assembly Basics
IC Device Families, Moore's Law, Package Overview, Cleanroom Practices, ESD Standards, Distinction between Front-end (Fab) and Back-end (ATMP), ATMP Process Flow, Wafer Preparation, Wafer Dicing and Back Grinding Concepts, Die Attach Process and Materials, Wire Bonding Fundamentals
Week 3: Packaging and Testing, Reliability, and Quality
IC Package Types: DIP, QFP, QFN, BGA, CSP, SiP; Encapsulation, Molding, Laser Marking and Simulation, Wafer Probe Testing and Probe Cards, Electrical Testing Fundamentals, Parametric Testing and Automated Test Equipment (ATE) Concepts, Mini-Project announcement, Reliability Testing, Yield, JEDEC Standards, Failure Mechanisms, SPC, Quality Control, Defect Classification,
Week 4: Assessment, Evaluation and Mini Project Presentation
Final Assessment, Viva Voce, Mini Project Presentation
Result, Certificate Distribution, Feedback, Placement Counselling

Weekly Schedule for Internship in PCB Design and IoT

Week 1: Basic Electronics and Measurements

Introduction to Electronics, Difference between Electrical and Electronics, Application and Career pathway. Electrical and workshop safety, ESD precautions, safe handling of tools. Basic Electronics - Charge, Current, Voltage, Power, Energy. Lab orientation, Basic safety precautions in electronics lab.

Introduction to electronic components; Passive Devices (Resistor, Capacitor, Inductor), Active Device (Diode, Transistor, IC), Reading component values and symbols, Hands-on demonstration and Practice of different equipment – DC Power Supply, DSO, Function Generator, DMM, Multimeter, wire stripper, and soldering tools.

Ohm's law, power, energy, series and parallel circuits. Introduction to Kirchhoff's law – KVL and KCL. Identify and test electronic devices such as Breadboard, Resistor, Resistor Colour Coding, Capacitor, Diode, LED, etc., oscilloscope (DSO) for waveform observation, function generator for signal input, energy meter basics, insulation resistance measurement using Megger, and introduction to logic analyzer for digital signal monitoring.

Week 2: Introduction to PCB and PCB Design

Introduction to PCB (Printed Circuit Board): definition, purpose, manufacturing overview. Types of PCB: single layer, double layer, multi-layer — structures, pros/cons, use-cases. Applications of PCBs in daily life.

Reading simple circuit diagrams and converting them into prototypes. Introduction to PCB layout: tracks, pads, vias, clearances, and component placement basics. Introduction to component placement and routing.

Introduction to PCB circuit designing concepts. Hands-on demonstration and practice on PCB circuit-design simulation software. Practice on circuit schematic diagram creation and PCB layout design (lab exercises).

Introduction to PCB printing and prototyping methods (toner transfer, photoresist, CNC milling). Hands-on practice on PCB printing, tracking, milling and drilling.

Soldering principles, solder types, and good soldering practice. Hands-on practice on soldering and de-soldering. Troubleshooting common soldering and wiring faults.

Introduction to PCB testing methods (continuity, visual inspection, power-up checks, functional testing). Common PCB faults and troubleshooting strategies. Testing and verification of completed PCB circuits for proper functionality and performance (lab).

Week 3: IoT Integration and Automation

Introduction to IoT and Industry 4.0: IoT definition and value, edge/fog/cloud layers, gateways and platforms, data flows and security/privacy basics, IoT protocols overview, Industry 4.0 concepts (CPS, predictive maintenance, smart manufacturing, smart buildings). Case-study discussion of an Industry 4.0 deployment

IoT Lab Orientation and Sensor Fundamentals: Sensor categories (temperature, pressure, motion, gas, proximity, light, humidity), electrical characteristics, breakout boards, signal conditioning basics, measurement tools (multimeter, oscilloscope), ESD and bench safety, lab documentation. Hands-on sensor identification, measuring sensor outputs, preparing a simple sensor datasheet summary.

Reading Schematics and PCB Prototype Conversion: Schematic symbols and conventions, pinouts and power rails, decoupling, pull-ups/pull-downs, level shifting, footprint selection,

placement rules for sensors, grounding and clearance considerations. Guided exercise converting a sensor schematic into a PCB layout plan. Introduction to Microcontrollers (MCUs): MCU core concepts, GPIO, ADC, timers, UART/I2C/SPI, PWM, interrupts, power modes, selecting MCUs for low-power IoT nodes, IDEs and toolchains, bootloading and flashing procedures. MCU board bring-up: power-up checks, blinking LED, serial console. MCU Interfacing with Sensors: Analog sensor interfacing and ADC considerations, digital buses (I2C/SPI/UART/1-Wire), polling vs interrupt-driven acquisition, calibration and filtering basics, timing and sampling. Hands-on labs connecting 2–3 sensor types to MCU, writing firmware to read and log values. Communication Modules and Actuators: Short-range wireless, wired interfaces, actuator types (relays, motors, solenoids), drivers (MOSFETs, motor drivers), protection (flyback diodes, snubbers, opto-isolation). Interface and test a wireless module and a motor/relay with proper driver circuit. IoT Integration: End-to-End System: Gateway selection, MQTT/CoAP basics, edge processing, security basics (auth, TLS), data logging and dashboards, OTA update concepts. Build a small project: sensor node reads data, transmits via MQTT to a local broker/cloud, dashboard visualization, and remote actuator command. Robotics Demonstration and Hands-On: Robot architecture, sensors used (encoders, IMU, proximity), motor control loops, communication and safety interlocks. Live demonstration of robot operation. PLC Demonstration and Industrial Integration: Demo of PLC controlling a small process (start/stop, interlocks), mapping I/O to PLC ladder logic. Semiconductor Assembly and Packaging Overview: Demonstration of assembly and packaging.
Week 4: Mini Project, Assessment, and Evaluation
Capstone Project and Verification: Project planning, schematic and PCB finalization, fabrication and assembly, firmware integration, functional testing, documentation and safety checks. Assessment: Project demonstration, test report, code repository, and oral defense. Result, Certificate, Feedback, Placement Counselling

Suggested Mini Projects

Students may work in teams of 2 on one of the following:

1. PCB Design and Development of Smart Home Automation System
2. IoT-Based Temperature Monitoring Device with Custom PCB
3. Smart Irrigation Controller with PCB Prototype
4. PCB-Based Environmental Monitoring System
5. Smart Street Light Controller with Custom PCB
6. IoT-Based Security Alarm System