UrbanScholar

PROGRAM BROCHURE

CAREER TRACK · IOT

INTERNET OF THINGS (IOT)



A build-real-hardware IoT track — sensors, microcontrollers, and cloud dashboards — for learners who want working devices, not just wiring diagrams.

10–12	7	6	2
WEEKS	MODULES	CAPSTONES	PROGRAM TRACKS

TWO TRACKS · KICKSTART & CAREER

Program Overview

How this track builds real connected-device skills

From a sensor to a live dashboard. Every module moves you one step further along the same pipeline — sense, connect, transmit, visualize — so by the end you've wired a full device-to-cloud system, not just a single blinking LED.

Built-in mentorship. Each module closes with a mentor-reviewed checkpoint, so gaps get caught early instead of at the final capstone.

Career layer, not an afterthought. Resume positioning, interview readiness, and aptitude prep run alongside the technical modules — not bolted on in the last week.

Who This Is For

- Students & freshers targeting IoT/embedded roles
- Electronics enthusiasts wanting a structured path
- Anyone comfortable with basic programming logic

What You'll Walk Away With

- 6 working IoT device projects for your portfolio
- Working fluency in microcontrollers, MQTT & cloud IoT platforms
- A recruiter-ready resume built around real hardware builds

Program Snapshot

18+ Hrs Live Instructor-Led Sessions

6 Working IoT Device Projects

7 Structured Learning Modules

Training + Internship Certificate

Mentor-Reviewed Project Checkpoints

Placement & Interview Support

Learning Path

7 modules, sequenced from foundations to deployment

1 · IoT Fundamentals

- IoT architecture end to end
- Sensors & actuators, explained practically
- A map of real IoT use cases

2 · Microcontrollers & Hardware

- Arduino, Raspberry Pi & ESP32 basics
- GPIO & breadboarding hands-on
- Circuit fundamentals you'll reuse constantly

3 · Embedded Programming

- C/C++ or MicroPython for microcontrollers
- Reading real sensor data reliably
- Writing efficient, low-power code

4 · Communication Protocols

- Wi-Fi & Bluetooth for device connectivity
- MQTT — the protocol IoT actually runs on
- HTTP basics for device-to-server calls

5 · Cloud & IoT Platforms

- AWS IoT Core / Azure IoT Hub basics
- Getting device data reliably into the cloud
- Managing devices at small scale

6 · Data Processing & Dashboards

- Storing sensor data properly
- Building real-time dashboards
- Setting alerts on sensor thresholds

7 · IoT Security

- Device authentication basics
- Securing device-to-cloud communication
- Common IoT vulnerabilities to design around

Tools and Softwares You Can Work With

Ar Arduino | RP Raspberry Pi | ES ESP32 | MQTT MQTT | AI AWS IoT Core | No Node-RED

Capstone Projects

Six builds that turn coursework into a portfolio — 1 of 2

1 · Smart Home Automation System

Control lights and appliances remotely via a mobile app and MQTT.

SOFTWARE USED

EA ESP32/Arduino MQTT MQTT

- Wire relay-controlled appliances
- Publish/subscribe over MQTT
- Control devices from a simple app

2 · IoT-Based Weather Monitoring Station

A sensor node that streams temperature and humidity data to a cloud dashboard.

SOFTWARE USED

ES ESP32 DS DHT sensor Cl cloud IoT platform

- Read sensor data reliably
- Stream data to the cloud continuously
- Visualize readings on a live dashboard

3 · Smart Irrigation System

Automate watering based on real soil-moisture sensor readings.

SOFTWARE USED

Ar Arduino So soil-moisture sensor Re relay

- Read & calibrate a moisture sensor
- Trigger watering automatically on thresholds
- Log irrigation activity over time

Capstone Projects

Six builds that turn coursework into a portfolio — 2 of 2

4 · Vehicle Tracking System

A GPS-based tracker sending live location data to a map dashboard.

SOFTWARE USED

GM GPS module | ES ESP32 | CD cloud dashboard

- Read GPS coordinates reliably
- Stream location data over the network
- Display live position on a map

5 · IoT Health Monitoring Wearable Prototype

A prototype that tracks heart rate/motion and pushes alerts to a cloud app.

SOFTWARE USED

PS Pulse sensor | ES ESP32 | Cl cloud IoT platform

- Read biometric sensor data
- Push readings to a cloud dashboard
- Trigger alerts on abnormal readings

6 · Smart Parking System

Detect and display parking-slot availability in real time.

SOFTWARE USED

US Ultrasonic sensors | ES ESP32 | Da dashboard

- Detect slot occupancy with sensors
- Aggregate availability across slots
- Display live availability on a dashboard

A Day in the Role

What an IoT Engineer's Day Actually Looks Like

- Wire & calibrate sensors on a device
- Write firmware for reliable data capture
- Debug connectivity between device & cloud
- Monitor live device data for anomalies
- Harden devices against basic security risks
- Iterate on hardware based on field feedback

> **The throughline:** every capstone in this brochure is a smaller version of one of these responsibilities — so the portfolio you leave with maps directly to the job you're training for.

Career Outlook

Where an IoT skill-set actually leads

IoT hiring spans manufacturing, agriculture, healthcare, and smart-city projects — companies need people who can bridge hardware and cloud, a genuinely scarce combination.

Role	What They Do	Salary Range (Fresher / Experienced)
IoT Engineer	Designs & builds connected device systems	₹4–7 LPA / ₹9–18 LPA
Embedded IoT Developer	Writes firmware for connected devices	₹4–8 LPA / ₹10–20 LPA
IoT Solutions Architect	Designs end-to-end IoT system architecture	₹8–12 LPA / ₹18–30 LPA
IoT Cloud Engineer	Builds the cloud side of IoT deployments	₹6–10 LPA / ₹14–24 LPA
Hardware/Product Engineer	Builds physical IoT device prototypes	₹4–7 LPA / ₹9–18 LPA
IoT Security Specialist	Secures connected-device deployments	₹6–10 LPA / ₹14–24 LPA

Indicative ranges from general India market trends — validate against current job-board data before publishing.

Companies Actively Hiring in This Space

Bo Bosch · Si Siemens · Ho Honeywell · TCS TCS · LT L&T · Wi Wipro

Representative employers in this space — not confirmed UrbanScholar hiring partners.

Program Tracks

Two tracks, same curriculum depth — the difference is placement intensity

KICKSTART

- 14+ hrs live cohort + recorded lectures
- 2 guided projects
- 6 months LMS access
- QR-verified completion certificate
- Mentor support — SLA ≤ 48 hrs
- Resume building workshop
- Mock aptitude test
- Pre-placement orientation session

CAREER

- 20+ hrs live cohort + recorded lectures
- 2 projects + capstone (Minor + Major)
- 6 months LMS access, extendable till placed
- QR-verified + Industry-Readiness certification
- Priority mentor support — SLA ≤ 24 hrs
- Resume + LinkedIn profile building
- 1-on-1 mock interviews with feedback
- Active placement & referral assistance

Common to Both Tracks

All 7 Curriculum Modules

All 6 Capstone Projects

Mentor-Reviewed Checkpoints

Training + Internship Certificate

Where UrbanScholar IoT Learners Can Head

Manufacturing & Industrial IoT

Smart City & Infrastructure Projects

AgriTech & HealthTech

Consumer Electronics Companies

Freelance / Independent Consulting

Placement Journey

How career support is woven through the program, not tacked on at the end

1

Build Foundation

Resume & LinkedIn built around real project outcomes, not generic templates.

2

Sharpen Aptitude

Structured aptitude & reasoning practice aligned to actual hiring-test formats.

3

Practice Interviews

Mock interviews with direct, specific feedback — not just a pass/fail score.

4

Get Placement Ready

Soft-skill coaching and, on the Career track, active referral support.

Why this order matters: most programs bolt placement prep onto the last week. Here it runs in parallel with the technical modules, so by the time your capstones are done, your resume and interview readiness are already in place — not started from scratch.

Quick Questions

Do I need prior background to start?

Some familiarity helps, but the early modules — starting with IoT Fundamentals — rebuild the fundamentals from the ground up.

What happens if I fall behind a session?

Every live session is recorded, and mentor SLA windows exist specifically to help you catch up between checkpoints.

Can I switch tracks mid-program?

Yes — Kickstart learners can upgrade to Career at any point by paying the difference, carrying forward completed modules.

Is the certificate recognized by employers?

It's a QR-verified training + internship certificate — employers can verify authenticity directly, not just take it on faith.

UrbanScholar

Industry-Trained. Project-Proven. Career-Ready.

Get In Touch

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PROGRAM

Internet of Things (IoT) — Kickstart & Career Tracks