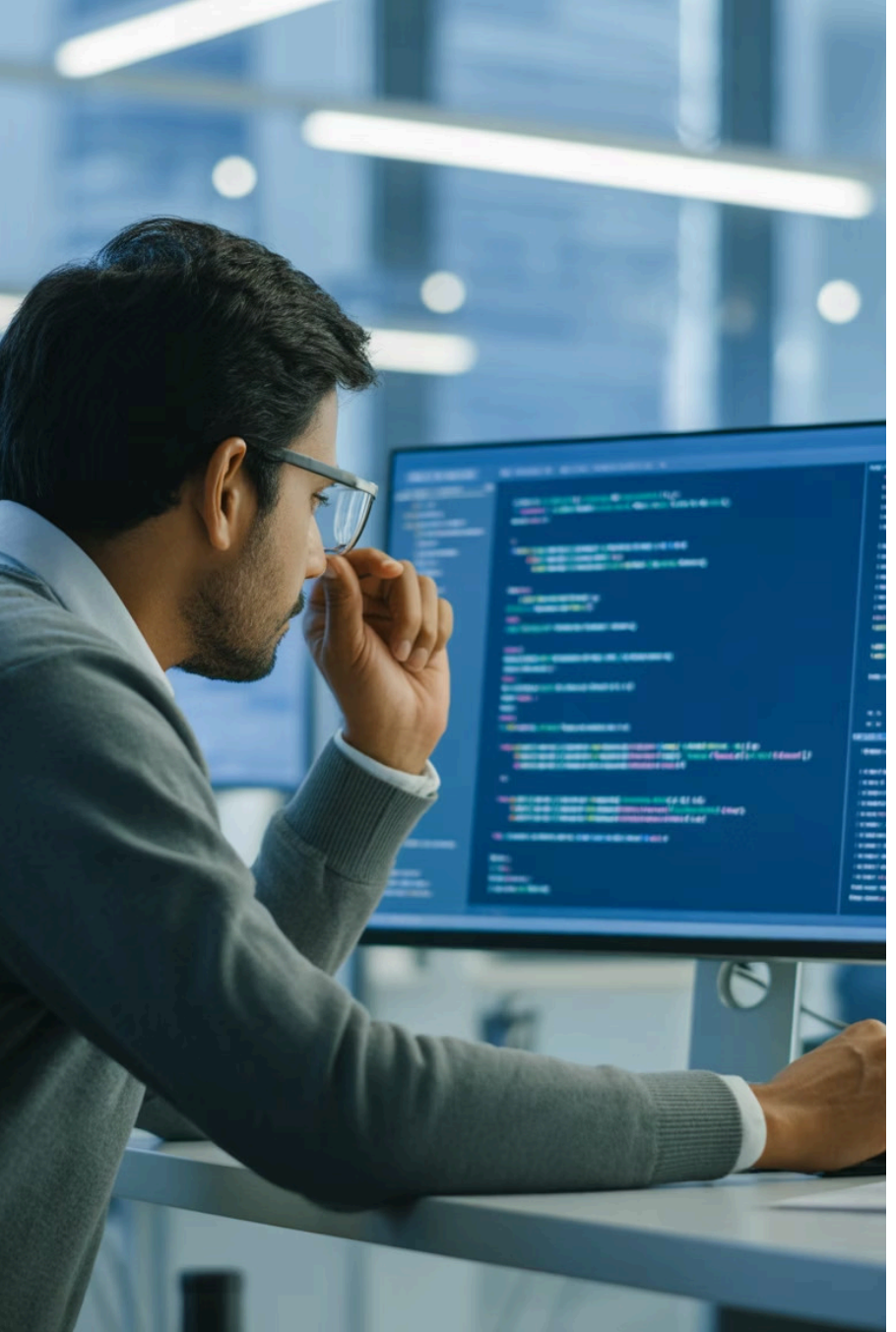
IoT and Automation with C++ Certification Program

Welcome to our comprehensive IoT and Automation certification program. This 270-hour curriculum is designed to transform you into an IoT Engineer Specialist, equipped with the skills to design, develop, and manage IoT systems across various industries.

Our program combines foundational software development with specialized IoT technologies, cloud integration, and security essentials. By the end of this journey, you'll be prepared for roles in smart homes, industrial automation, healthcare, agriculture, and more.



Software Foundation Course - C

Core Programming Concepts

Master the fundamentals of C programming, including variables, data types, operators, control flow statements, and arrays.

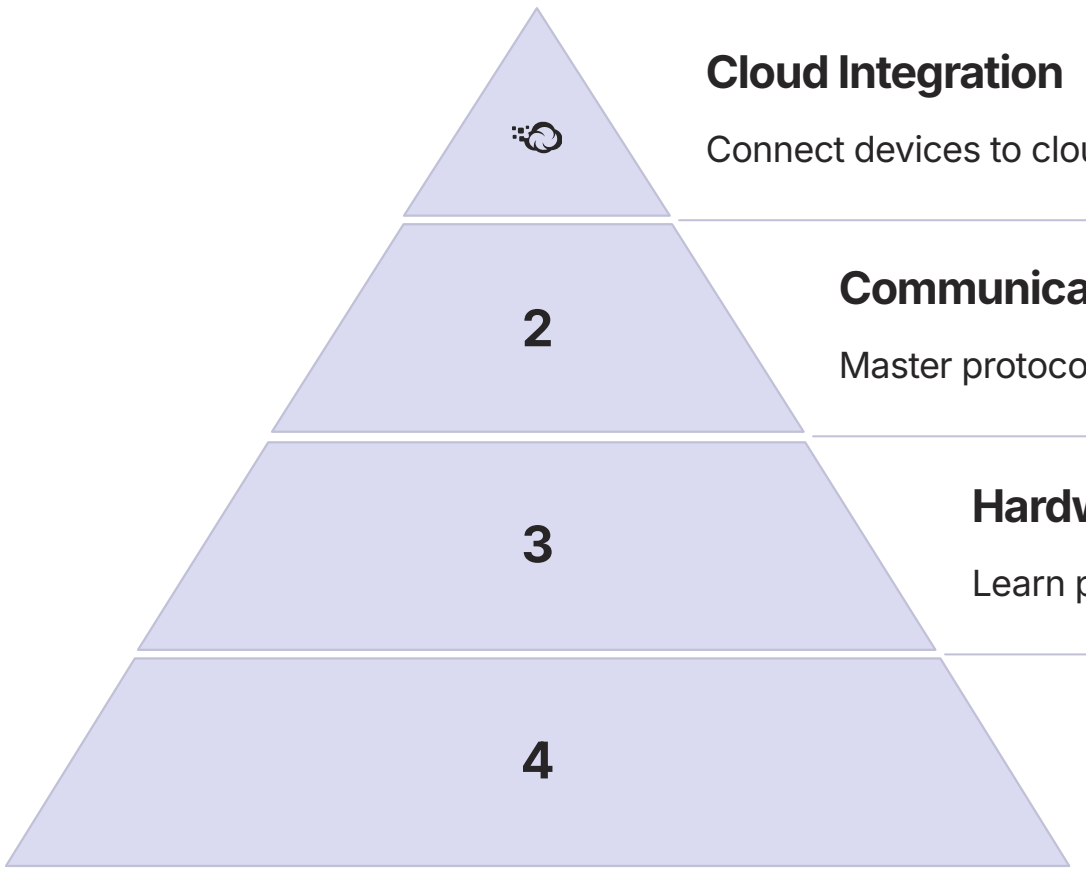
Advanced C Techniques

Develop expertise in pointers, memory management, structures, file handling, and basic data structures.

Industry Recognition

Earn an IBM certification with lifetime validity, opening doors to roles in embedded systems, operating systems, and automotive industries.

Fundamentals of IoT



Cloud Integration

Connect devices to cloud platforms

Communication & Networking

Master protocols and connectivity

Hardware & Sensors

Learn platforms, sensors, and actuators

IoT Foundations

Understand core concepts and architecture

This IBM-certified course provides a comprehensive introduction to IoT fundamentals. You'll progress from basic concepts to practical implementation through mini-projects. The certification has lifetime validity and prepares you for roles such as IoT Developer, Embedded Systems Engineer, and IoT Analyst across smart manufacturing, healthcare, agriculture, and smart cities sectors.

IoT using Firebase

NodeMCU Fundamentals

Master the basics of NodeMCU and sensor interfacing for IoT applications, establishing a strong foundation in hardware connectivity.

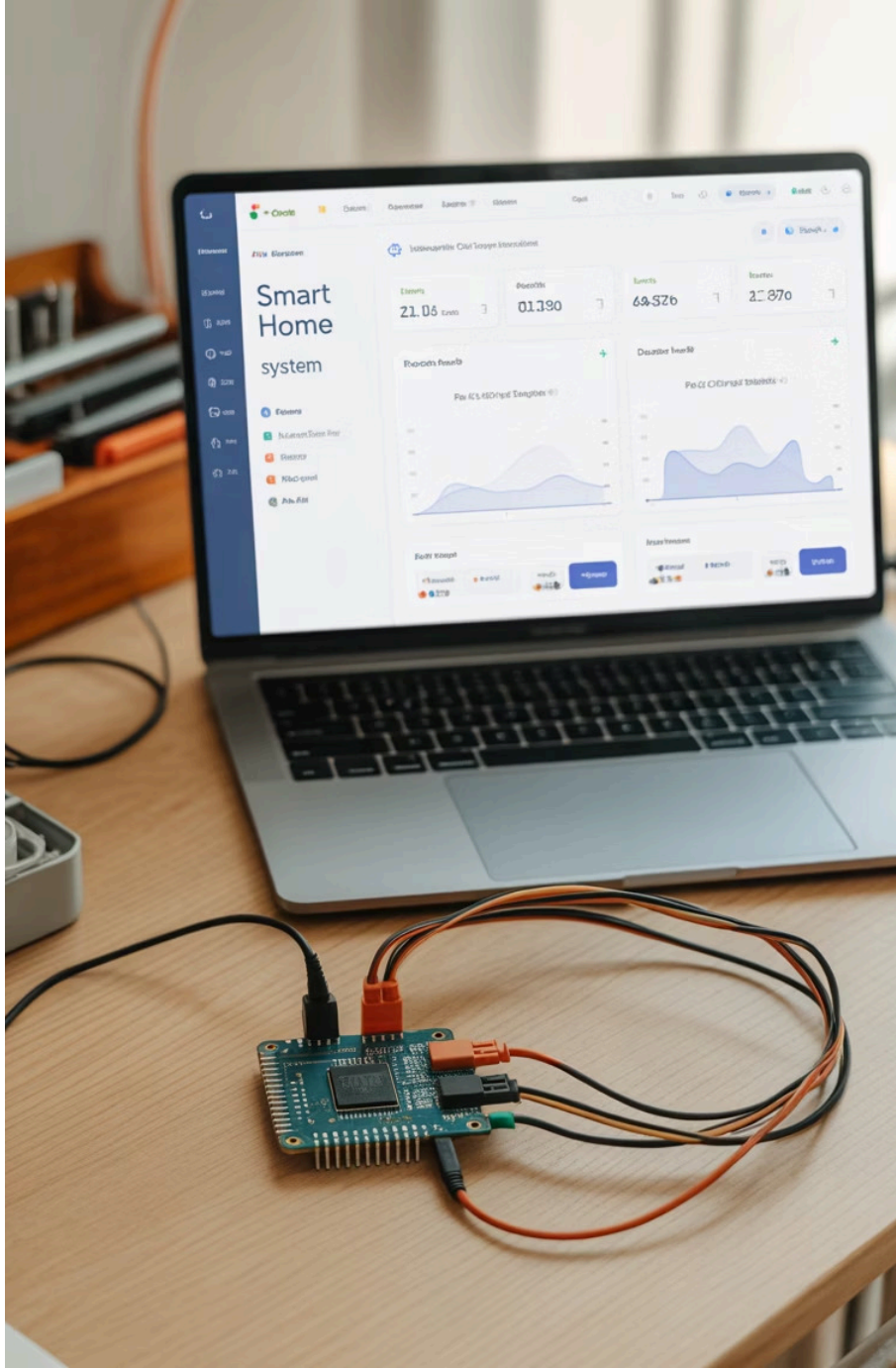
Connectivity & Communication

Develop expertise in Wi-Fi connectivity, networking, and communication protocols essential for IoT device communication.

Cloud Integration & Projects

Learn cloud platform integration, data visualization, and apply your skills in home automation projects and a comprehensive capstone.

This STEM.org certification is valid until May 2027 and prepares you for roles as an IoT Developer, Embedded Systems Engineer, or Full Stack Developer. The course is highly regarded in the industry and directly applicable to smart manufacturing, healthcare, and smart cities initiatives.



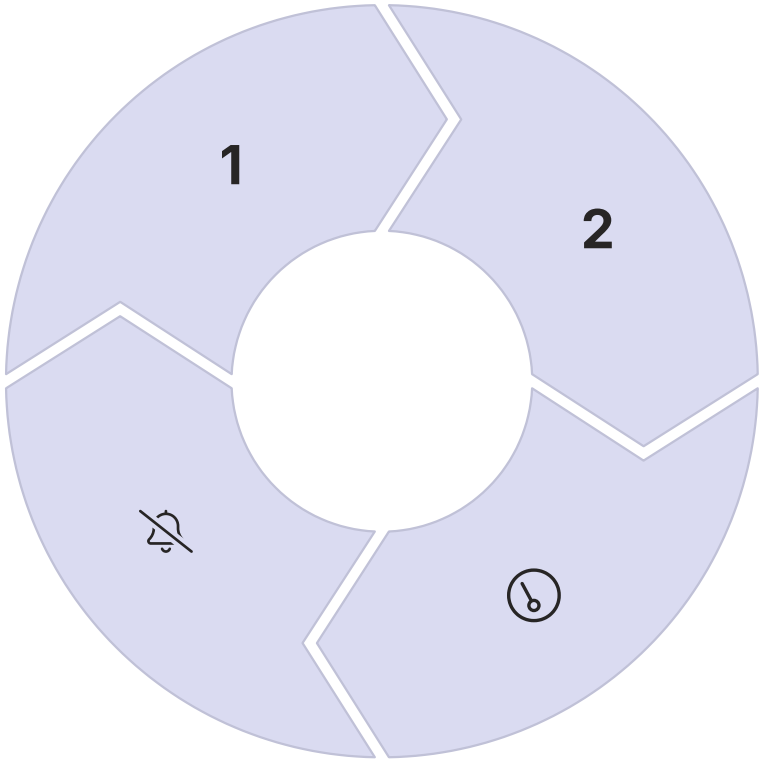
IoT and Cloud

Firebase Realtime Database

Master cloud database for IoT data storage

Alerts & Notifications

Create responsive notification systems



Device Connectivity

Connect ESP32/ESP8266 to cloud services

Monitoring & Control

Implement real-time monitoring systems

This STEM.org certification focuses on integrating IoT devices with cloud platforms, particularly Firebase. The certification is valid for 1-5 years and prepares you for careers as an IoT Developer, Cloud Engineer, or IoT Solutions Architect. The skills are directly applicable to industries embracing smart technology solutions.

IoT and Security Essentials

1

Cloud Basics

Introduction to IoT and cloud computing fundamentals

2

Implementation

Hardware setup, sensor interfacing, and cloud connectivity

3

Data Management

Visualization, analytics, and remote automation

4

Security Focus

IoT security fundamentals and best practices

This STEM.org certification has a validity of 1-3 years and focuses on the critical intersection of IoT implementation and security. Graduates are prepared for specialized roles such as IoT Security Analyst, Cybersecurity Engineer, and Security Consultant. The program is recognized for its comprehensive coverage of both IoT functionality and essential security protocols.

IoT using Node MCU

IoT Fundamentals

Master the core concepts of IoT and communication technologies that form the foundation of connected device ecosystems.

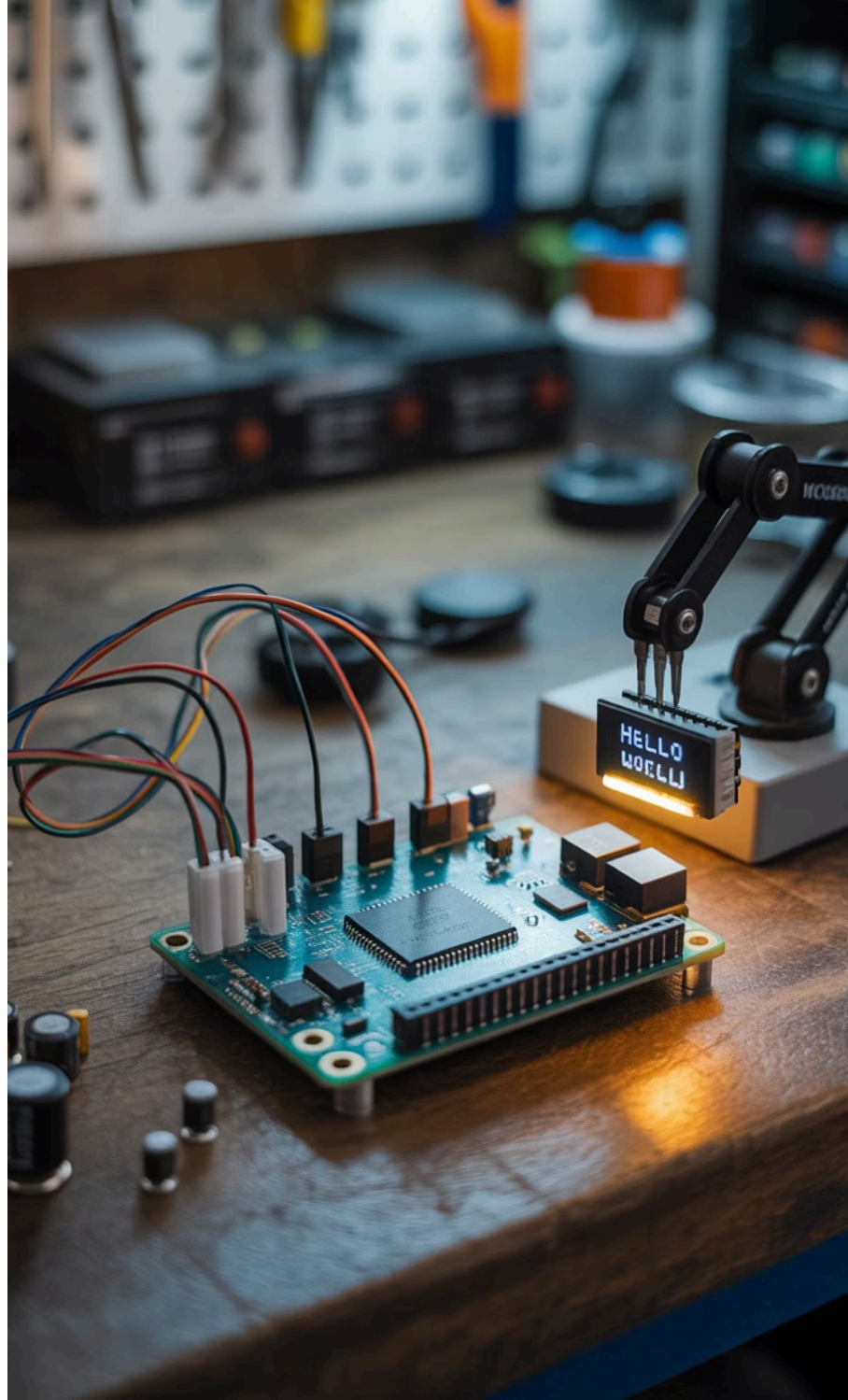
Security Protocols

Develop expertise in cryptography, data protection, secure communication protocols, and authentication systems.

System Design

Learn to design secure IoT systems with proper compliance and privacy considerations for real-world applications.

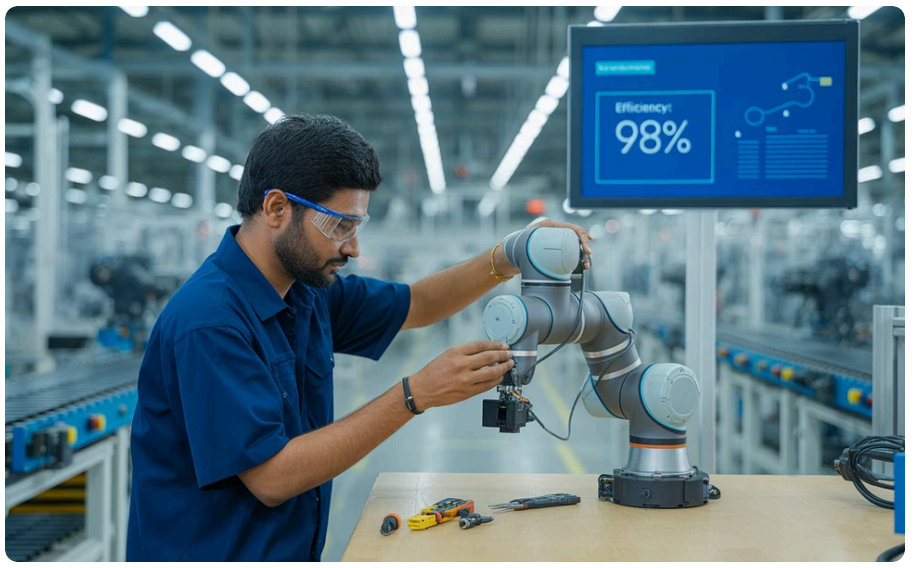
This STEM.org certification offers lifetime validity while preparing you for roles as an IoT Developer, Embedded Systems Engineer, or Smart Device Developer. The skills are directly applicable to smart homes, healthcare devices, industrial automation, and agricultural IoT solutions. The certification is widely recognized by IoT development firms and electronics manufacturers.



Career Opportunities

Software Development

Roles include Software Developer, Embedded Systems Engineer, and Firmware Developer, focusing on the core programming aspects of IoT systems.



IoT Specialization

Positions such as IoT Developer, IoT Analyst, and IoT Solutions Architect involve designing and implementing complete IoT ecosystems.

Security Focus

Careers as IoT Security Analyst, Cybersecurity Engineer, and Security Consultant address the critical security needs of IoT implementations.

Our certification program prepares you for diverse career paths across the IoT landscape, with roles ranging from core development to specialized security positions.

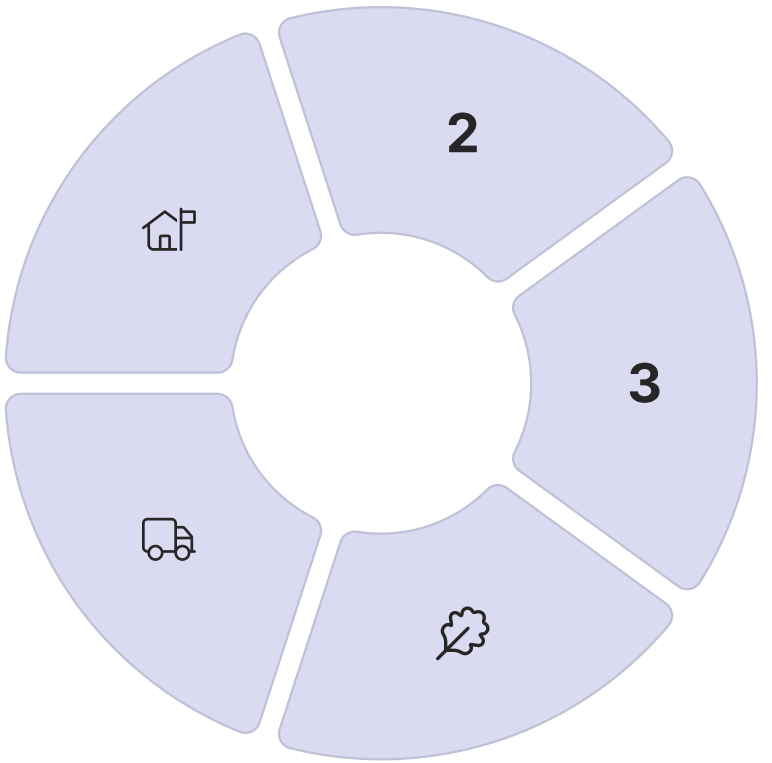
Industry Applications

Smart Homes

Automated lighting, security, climate control, and entertainment systems

Logistics

Supply chain tracking, fleet management, and inventory optimization



Industrial IoT

Predictive maintenance, asset tracking, and automated manufacturing

Healthcare

Remote patient monitoring, medical device integration, and hospital management

Agriculture

Precision farming, livestock monitoring, and automated irrigation

IoT Engineers are essential across numerous industries, implementing solutions that enhance efficiency, reduce costs, and enable new capabilities. Our program ensures you develop the versatile skills needed to succeed in these diverse application areas.

Program Overview

Total Duration	270 hours
Certification Providers	IBM and STEM.org
Certification Validity	Lifetime to 5 years (varies by course)
Exit Profile	IoT Engineer Specialist
Key Technologies	C, NodeMCU, ESP32/ESP8266, Firebase, Cloud Platforms

This comprehensive program builds your expertise progressively, from foundational programming to specialized IoT applications. Each module builds upon previous knowledge, creating a cohesive learning journey that culminates in your certification as an IoT Engineer Specialist.

Upon completion, you'll possess the technical skills, security knowledge, and practical experience needed to design, implement, and manage IoT solutions across multiple industries.