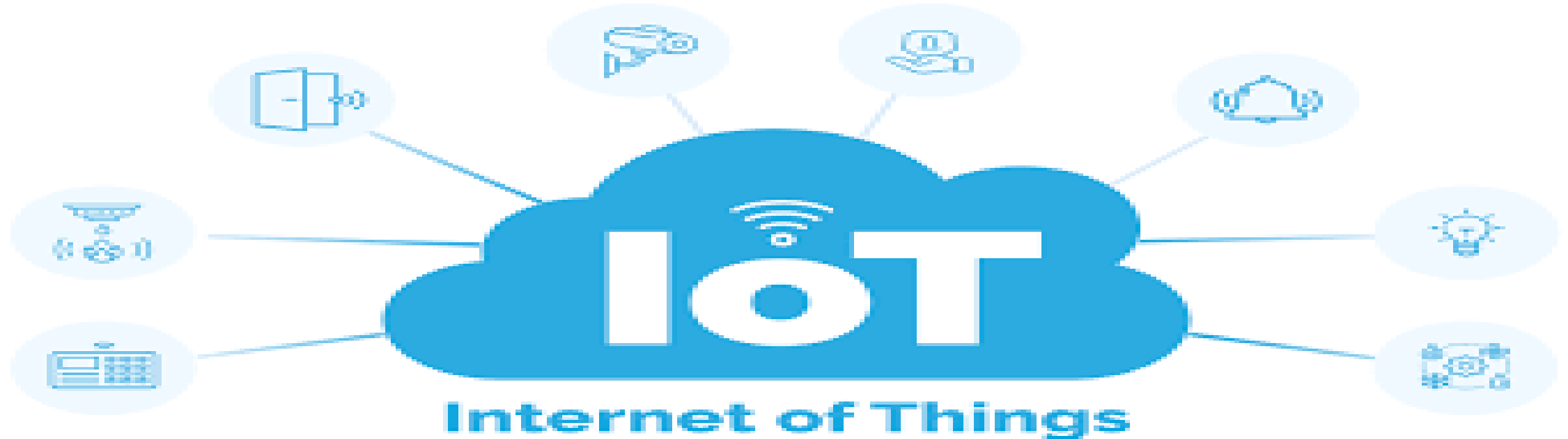




**ROLASOFT PROFESSIONAL COMPUTER & IT
COURSES VERSION 2.0 LATEST**

Diploma in Certified IoT Engineer

Become a job-ready IoT Engineer in 6 months!

Benefits of Studying Diploma in IoT Engineer with RolaSoft

✓ 1. Industry-Relevant Curriculum

Stay ahead with a syllabus designed by industry experts, focused on real-world applications of IoT.

✓ 2. Hands-On Training

Learn by doing — build real-time projects, and gain practical experience.

✓ 3. Experienced Instructors

Gain insights from certified professionals and senior software engineers with years of teaching and industry experience.

✓ 4. Placement Assistance

Access job support services including resume building, mock interviews, and direct placement opportunities with partner companies.

✓ 5. Flexible Learning Modes

Choose between: **Online**, **Offline (at our center)**, or **Hybrid Classes**

Benefits of Studying Diploma in IoT Engineer with RolaSoft

✓ 6. Mini & Major Projects

Work on individual and group projects to strengthen your portfolio and impress future employers.

✓ 7. Certification Upon Completion

Earn a **Diploma Certificate** from **RolaSoft Technologies**, recognized by IT recruiters and employers.

✓ 8. Small Batch Size

Personalized attention and better interaction in small groups for an enhanced learning experience.

✓ 9. Affordable Fees & Installment Plans

Top-tier training at a reasonable cost, with flexible payment options.

✓ 10. Career-Oriented Skills You'll Gain at RolaSoft Technologies

RolaSoft ensures you're job-ready with the right tech stack and practical knowledge.

Diploma in IoT Engineer Course Details



Duration

Six (6) Months



Schedule

Weekdays / Weekends



Learning Modes

Online, Offline (at our center), or Hybrid Classes



Start Date

New batches start every month — enroll now!



Eligibility

No prior experience required

IoT Engineer Prerequisites

- ✓ Basic knowledge of programming (Python or C preferred)
- ✓ Understanding of networking concepts (TCP/IP, HTTP, MQTT)
- ✓ Familiarity with electronics and sensors (helpful but not required)

Diploma in IoT Engineer – Program Details

Program Overview

The **Internet of Things (IoT)** course at **Rolasoft Technologies** is a 6-month program aimed at providing students with in-depth knowledge of IoT technologies, architectures, and applications. The course is designed to teach the essential skills required to develop IoT solutions, including working with hardware, software, sensors, and communication protocols. Students will also learn how to integrate IoT devices with cloud platforms for data storage, processing, and analysis.

Throughout the course, students will work on practical IoT projects using popular IoT platforms like **Raspberry Pi**, **Arduino**, and various cloud services such as **AWS IoT**, **Google Cloud IoT**, and **Microsoft Azure IoT**. The course also covers topics such as device communication, security, and the use of machine learning in IoT systems.

By the end of the course, students will be able to design, build, and deploy IoT applications for a variety of industries, including smart homes, healthcare, agriculture, and industrial automation.

Diploma in IoT Engineer Course Curriculum

Month 1: Introduction to IoT and Basic Electronics

✓ What is IoT?

(Overview of the IoT ecosystem, Key components of an IoT system: Devices, Sensors, Actuators, and Communication Networks, Applications of IoT in various industries (smart homes, healthcare, industrial automation))

✓ Introduction to Electronics and Hardware

(Basics of electronics: Voltage, current, resistors, capacitors, and circuits, Introduction to microcontrollers (Arduino, Raspberry Pi), Interfacing basic sensors (temperature, humidity, motion) with microcontrollers)

✓ IoT Communication Protocols

(Overview of communication protocols: MQTT, CoAP, HTTP, and WebSockets, Differences between Wi-Fi, Bluetooth, Zigbee, LoRa, and Cellular networks)

✓ Hands-On: Set up an Arduino or Raspberry Pi, connect sensors, and collect data

Diploma in IoT Engineer Course Curriculum

Month 2: Working with Sensors and Actuators

✓ IoT Sensors and Actuators

(Types of sensors (temperature, humidity, pressure, gas, motion, light), Interfacing sensors with microcontrollers (Arduino/Raspberry Pi), Actuators: Motors, relays, and servo motors, Reading sensor data and controlling actuators)

✓ Sensor Data Processing

(Signal conditioning: Amplifying and filtering sensor signals, Analog-to-digital conversion (ADC) and digital-to-analog conversion (DAC))

✓ Communication and Data Transmission

(Wired vs wireless communication in IoT, Setting up communication between devices using I2C, SPI, and UART protocols)

✓ Hands-On: Build a system that reads temperature data from a sensor and controls an actuator based on conditions

Diploma in IoT Engineer Course Curriculum

Month 3: IoT Cloud Integration and Data Management

✓ Introduction to Cloud Computing in IoT

(Overview of cloud platforms for IoT: AWS IoT, Google Cloud IoT, Microsoft Azure IoT, Benefits of integrating IoT devices with the cloud, IoT data storage, processing, and visualization)

✓ Cloud Platforms for IoT

(Setting up accounts on AWS, Azure, or Google Cloud, Working with cloud IoT services (AWS IoT Core, Azure IoT Hub, Google Cloud IoT Core), Storing IoT data in the cloud and setting up dashboards for visualization)

✓ IoT Data Processing and Analytics

(Real-time and batch data processing in IoT systems, Introduction to data analysis tools and machine learning integration for IoT)

✓ Hands-On: Set up an IoT device to send sensor data to the cloud and visualize it on a dashboard

Diploma in IoT Engineer Course Curriculum

Month 4: IoT Security and Device Management

✓ IoT Security Fundamentals

(Key security challenges in IoT: Device authentication, data integrity, and privacy, Secure communication protocols (TLS, SSL) for IoT devices, Encryption techniques for protecting IoT data)

✓ Device and Identity Management

(Managing device identities and authentication in cloud IoT platforms, Over-the-air (OTA) updates for firmware management, Role-based access control (RBAC) and secure communication protocols)

✓ IoT Network Security

(Securing IoT networks using VPNs, firewalls, and intrusion detection systems, Security concerns with wireless communication protocols (Wi-Fi, Bluetooth, Zigbee))

✓ Hands-On: Implement secure communication between IoT devices and the cloud using TLS encryption

Diploma in IoT Engineer Course Curriculum

Month 5: Advanced IoT Applications and Protocols

✓ Smart Home Automation

(Building IoT-based home automation systems (lighting, HVAC, security systems), Controlling smart home devices using mobile apps or voice assistants (e.g., Amazon Alexa, Google Assistant))

✓ Industrial IoT (IIoT)

(Understanding Industry 4.0 and the role of IoT in manufacturing and supply chains, Using IoT for predictive maintenance, equipment monitoring, and asset tracking)

✓ IoT for Healthcare

(Building IoT-based health monitoring systems (wearables, medical devices), Real-time monitoring and alerting for critical health conditions)

✓ Hands-On: Design a smart home system that integrates IoT devices for lighting and temperature control

Diploma in IoT Engineer Course Curriculum

Month 6: Final Project and Career Preparation

✓ Final IoT Project

(Students will work on a final project to design and implement a complete IoT solution. The project can be in any domain (smart home, healthcare, agriculture, or industrial automation). The project should involve sensors, communication protocols, cloud integration, and device control)

✓ Machine Learning in IoT

(Introduction to using machine learning in IoT for predictive analytics, Real-time decision-making using IoT data and AI models)

✓ **Hands-On:** Implement a machine learning model to predict sensor data trends based on historical data

Tools & Technologies Used

Tools & Technologies Used for **Certified IoT Engineer** Course are:

- ✓ Hardware: Arduino, Raspberry Pi, ESP8266, ESP32, Sensors (Temperature, Humidity, Motion, Light)
- ✓ Software: Arduino IDE, Raspberry Pi OS, Python
- ✓ IoT Cloud Platforms: AWS IoT, Google Cloud IoT, Microsoft Azure IoT Hub
- ✓ Communication Protocols: MQTT, HTTP, CoAP, LoRa, Bluetooth Low Energy (BLE)
- ✓ Data Processing & Visualization: AWS Lambda, Google BigQuery, Grafana, ThingSpeak
- ✓ Security: TLS, SSL, OAuth, JWT

Final Capstone Project (End of 6 Months)

Students will complete an **industry-level project** in **Certified IoT Engineer** :

✓ The project can be in any domain (smart home, healthcare, agriculture, or industrial automation). The project should involve sensors, communication protocols, cloud integration, and device control (Capstone Project)

IoT Engineer Learning Outcomes

By the end of this course, students will be able to:

- ✓ Understand the architecture and components of an IoT system, including sensors, microcontrollers, and communication protocols
- ✓ Design and build IoT devices using platforms like **Arduino** and **Raspberry Pi**
- ✓ Integrate IoT devices with cloud platforms for data storage, processing, and visualization
- ✓ Implement IoT security best practices to protect data and devices
- ✓ Build smart applications using IoT devices in domains like smart homes, healthcare, and industrial automation
- ✓ Work on IoT projects involving real-time data analysis and machine learning
- ✓ Prepare for IoT-related roles such as **IoT Engineer**, **IoT Developer**, and **Embedded Systems Engineer**

Certification Obtain

After completion of the program, the student will be awarded with a certificate:

Diploma in Certified IoT Engineer

The program also prepares students for industry certifications such as:

- ✓ Certified Internet of Things (IoT) Practitioner – CertNexus
- ✓ Microsoft Certified: Azure IoT Developer Specialty
- ✓ AWS Certified: IoT Core – AWS Learning Path
- ✓ IoT Professional Certification – IoT-Inc.
- ✓ IIoT (Industrial IoT) Certification – ISA / PTC / Udacity
- ✓ IoT Security Foundation Certified – IoTSF

IoT Engineer Career Opportunities

- ✓ IoT Solutions Architect
- ✓ IoT Hardware Engineer
- ✓ Embedded Systems Developer
- ✓ IoT Cloud Engineer
- ✓ IoT Network Engineer
- ✓ IoT Data Analyst / Data Scientist
- ✓ IoT Security Engineer
- ✓ IoT App Developer (Mobile/Web)

Who Should Take This IoT Engineer ?

Who Should Take This **Certified IoT Engineer** ?

- ✓ **Software engineers** and **developers** interested in learning IoT development
- ✓ **Hardware engineers** looking to integrate sensors and IoT devices
- ✓ **Tech enthusiasts** who want to explore the world of connected devices
- ✓ **Students** pursuing careers in embedded systems, smart technologies, or IoT
- ✓ **Professionals** interested in applying IoT in areas like automation, healthcare, and agriculture

Rolasoft Technologies Services

Rolasoft Technologies – Services Offered

✓ **SOFTWARE DEVELOPMENT COMPANY**

(MOBILE APPLICATION, WEB APPLICATION, DESKTOP APPLICATION, CUSTOMIZED APPLICATION, E-COMMERCE WEBSITE)

✓ **PROFESSIONAL COMPUTER AND IT EDUCATION**

(TOP-UP PROGRAMS, DIPLOMA PROGRAMS, CERTIFICATE PROGRAMS, TECH @ SCHOOL, CORPORATE PROGRAMS, SIWES PROGRAMS, CUSTOMIZED PROGRAMS)

✓ **DIGITAL ADVERTISING AND BUSINESS BRANDING**

(SOCIAL MEDIA MARKETING, EMAIL MARKETING, CONTENT MARKETING, WEBSITE SEO, BRANDED CLOTHING, STICKERS AND TAG, CUSTOM BRANDING, AND MANY MORE)

✓ **INTERNATIONAL UNIVERSITY ADMISSION PROCESSING**

(AMERICA, UK, CANADA, EUROPE, AFRICA, AND MANY MORE)

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Enroll Today & Start Your IoT Engineer Journey!
Shape your future with IoT Engineer.