

Certified Internet of Things (IoT) Practitioner

Course Overview

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This is a 3-day class

In this course, students will learn general strategies for planning, designing, developing, implementing, and maintaining an IoT system through various case studies and by assembling and configuring an IoT device to work in a sensor network. Students will create an IoT device based on an ESP8266 microcontroller, implementing various common IoT features, such as analog and digital sensors, a web-based interface, MQTT messaging, and data encryption.

Who Should Attend

This course is designed for IT professionals with baseline skills in computer hardware, software support, and development who want to learn how to design, develop, implement, operate, and manage Internet of Things devices and related systems. It is for those interested in learning more about embedded systems, microcontroller programming, IoT security, and the development life cycle for IoT projects.

While students will gain hands-on experience assembling a prototype IoT device and using software development tools, these activities are closely guided, so previous experience in electronics assembly and programming are not required. This course prepares students for taking the CertNexus Certified Internet of Things (IoT) Practitioner (Exam ITP-110).

Course Objectives

In this course, you will learn how to apply Internet of Things technologies to solve real-world problems.

You will:

- Construct and program an IoT device.
- Communicate with an IoT device using wired and wireless connections.
- Process sensor input and control an actuator on an IoT device.
- Manage security, privacy, and safety risks on IoT projects.
- Plan an IoT prototyping and development project.

Course Outline

1 PLANNING AN IOT IMPLEMENTATION

Select a General Architecture for an IoT Project
Identify Benefits and Challenges of IoT

2 CONSTRUCTING AND PROGRAMMING AN IOT DEVICE

Select and Configure a Processing Unit
Select a Microcontroller Power Source
Use a Software Development Kit to Program an IoT Device

3 COMMUNICATING WITH AN IOT DEVICE

Communicate Using Wired Connections
Communicate Using Wireless Connections
Communicate Using Internet Protocols

4 PROCESSING IOT DATA

Process IoT Device Input and Output
Process Data in the Cloud
Provide Machine to Machine Communication



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5 MANAGING RISKS ON IOT PROJECTS

Identify IoT Security and Privacy Risks
Manage IoT Security and Privacy Risks
Manage IoT Safety Risks

6 UNDERTAKING AN IOT PROJECT

Identify Real World Applications for IoT
Follow the IoT Development Lifecycle