

# Certified Internet of Things (IoT) Practitioner

## Course Overview

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.

This is a 3-day class

## Upcoming Dates

Date	Time	Where
12/18/2019	9:00AM - 5:00PM	Online LIVE
03/18/2020	9:00AM - 5:00PM	Online LIVE
06/03/2020	9:00AM - 5:00PM	Online LIVE

[View All Course Dates & Register Today](#)

## 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

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## 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

## 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