

What is Internet of Things (IoT) and why it matters?

The Internet of Things or IoT refers to the billions of physical devices around the world that are connected to the internet. As the world becomes increasingly digital, everything from coffee machines to cars are quickly becoming part of this network. Gartner forecasted that the number of connected things in use will go up to 25 billion by 2021, from 14.2 billion in 2019.

"The IoT will continue to deliver new opportunities for digital business innovation for the next decade, many of which will be enabled by new or improved technologies," said Nick Jones, Research Vice President at Gartner.

The Diploma in Internet of Things (IoT)

As technology develops and changes it's important to keep your skills up to date. This diploma is designed to cover IoT from technology and application point of view, through IoT hands-on workshop, to IoT platforms and machine learning of IoT data.

Diploma Outline

The Diploma in Internet of Things (IoT)			
Course Title		Duration (Per Workshop)	Course Fee (Per Workshop)
Module 1	Introduction to Internet of Things (IoT) – Technologies and Applications	12 hours	HK\$4,800
Module 2	Python for IoT – Beginner to Advanced <i>(RTTP Registered course)</i>		
Module 3	IoT Sensor Do-It-Yourself (DIY) Experience Workshop <i>(RTTP Registered course)</i>		
Module 4	IoT Platforms <i>(RTTP Registered course)</i>		
Module 5	Machine learning for IoT Data <i>(RTTP Registered course)</i>		
<ul style="list-style-type: none"> • These programmes combine technical and non-technical content. Participants can make enrolments to the individual course based on their needs/ interests. • To attain the Diploma Certificate, participants are required to fulfil 75% attendance for all modules, i.e. module 1-5, pass the assessment and possess one of the following qualifications: <ol style="list-style-type: none"> 1. be a Certificate Holder in related areas; or 2. achieve 5 grade Es in HKCEE or equivalent; or 3. achieve 5 Level 2s in HKCEE or equivalent; or 4. achieve 5 Level 2s in HKDSE or equivalent; or 5. mature student* <p><i>* 18 years old or above and with 2 years or above working experience</i></p> 			

Diploma in Internet of Things (IoT): Module 3: IoT Sensor Do-It-Yourself (DIY) Experience Workshop

再工業化及科技培訓計劃 (RTTP)
認可課程

企業完成審批後，可獲最多三份之二的
學費資助。

Reindustrialisation and
Technology Training Programme
(RTTP) registered course

After approval of the funding, 2/3 of
the course fee will be funded.

26 – 27 Aug 2019 (Mon – Tue)

Course Code: 10008208-03

Introduction

This module aims to build a IoT sensor using the popular ESP8266 component – through controlling input and output and connect to the Internet to submit sensed data.

Objectives

- Understand the ESP8266 component
- Understand how to control LED lighting
- Understand how to get input from buttons
- Understand how to perform debugging
- Understand how to connect to the Internet
- Understand how to send sensed data in client-server model
- Understand how to get temperature and humidity data using the board

Target Audience

- IT Managers
- System Analysts
- Software Architects
- Software Developers
- IoT Hardware Developers
- Business Analysts
- Data Analysts
- Data Scientists

Prerequisites

It is highly recommended that participants process basic programming knowledge (Python).

Course Outline	
Day 1	Day 2
<p>Introduction</p> <ul style="list-style-type: none"> • Introduction to IoT • Working with Component in IoT • Automation with ESP8266 <p>Installation</p> <ul style="list-style-type: none"> • Install software to work with IoT <p>Lighting and Blinking an LED</p> <ul style="list-style-type: none"> • Bread Board Detail View • How to Light up an LED • How to Blink an LED <p>Input Button</p> <ul style="list-style-type: none"> • Digital Input from Button • More on Digital Input from Button <p>Debugging using Serial Monitor</p> <ul style="list-style-type: none"> • Debugging using Serial Monitor • Debugging using Serial Monitor Coding <p>Button as a Switch</p> <ul style="list-style-type: none"> • Adding Button to Bread Board • Using Button as a Switch • Analog Read Using LDR <p>Connecting Internet</p> <ul style="list-style-type: none"> • Analog read from Pot • Pot Controlling LED • Analog Write using PWM 	<p>Client Server Model</p> <ul style="list-style-type: none"> • Programming the ESP as a web server • Controlling an LED over the Internet • Sending Sensor Values to Browser • Working with ESP Server Example • ESP HTTP Client Server Example <p>Getting Temperature and Humidity</p> <ul style="list-style-type: none"> • How to get MAC address • Uploading Data on Servers • Sending Data to Server • Temperature and Humidity • Required Post String <p>Wrap-up</p> <ul style="list-style-type: none"> • Creating Weather Station • Creating Server Name • Connecting to Web Server • Defining Get Weather Data • Getting Data from Server • Creating JSON Array • Finding the parameters • Compiling Sketch

- Light Intensity Control using Pot
- Connecting to the Internet

Module 3 Details

Date & Time:	26 – 27 Aug 2019 (Mon – Tue), 9:30am – 5:00pm
Duration:	6 hours per day, total 12 lecturing hours
Venue :	Hong Kong Productivity Council, 1/F, HKPC Building, 78 Tat Chee Avenue, Kowloon Tong, Kowloon, Hong Kong. (Kowloon Tong MTR Station Exit C)
Medium of Instruction :	Cantonese, and supplemented with English for technical terms
Award of Certificate :	Participants who have attained at least 75% attendance will be awarded a certificate of attendance issued by the Hong Kong Productivity Council
Course Fee :	HK\$4,800 Reindustrialisation and Technology Training Programme (RTTP) registered course – after approval of the funding, 2/3 of the course fee will be funded.

Application

To enrol, please complete the attached enrolment form and send it together with the appropriate fee to HKPC Academy, Hong Kong Productivity Council, 3/F, HKPC Building, 78 Tat Chee Avenue, Kowloon Tong, Kowloon, Hong Kong.

Attention: Ms KWOK.

[All cheques should be crossed and made payable to the Hong Kong Productivity Council.]

Participants are advised to make registration on or before 12 Aug 2019 (Mon).

Enquiries

Please call Ms KWOK at +852 2788 6271, fax +852 2190 9774 or email: fannie@hkpc.org

Website: <http://www.hkpcacademy.org>