

# Certified IoT Foundation (CIOTF)

[www.zohlgroupp.com](http://www.zohlgroupp.com)

**COURSE CODE:** CIOTF **LEVEL:** Basic to Intermediate

**LANGUAGE:** Bahasa & English

## ABOUT CERTIFICATION

GSDC's Certified IoT Foundation wraps up a vast area of basic concepts, terminology and the key features of IoT. The definition of the Internet of things has evolved due to the convergence of multiple technologies, real-time analytics, machine learning, commodity sensors, and embedded systems. Traditional fields of embedded systems, wireless sensor networks, control systems, automation, and others all contribute to enabling the Internet of things. The course content gives you a clear vision of the business perspective of implementing IoT as well as the advantages of early adoption and monetization model. It represents several scenarios including application and real-life use cases that resulted in smooth services so that the organizations make a move to IoT. In a nutshell, Certified IoT Foundation provides future insights in IoT and predicts the status of the connected world.

## OBJECTIVE

The objective of Certified IoT Foundation aims towards:

1. Defining the concepts and terminologies of IoT.
2. Examining new devices and interfaces that are driving IoT growth.
3. Relating to business perspectives of IoT
4. Predicting the implications of IoT for your business.
5. Looking after the role of enabling technologies for IoT, such as cloud computing and Big Data.
6. Identifying security and governance issues with IoT.
7. Explaining future growth opportunities of IoT in the coming years.

## COURSE DURATION

5 days (9am—5pm)

Tea Breaks: 10:30am & 3:30pm | Lunch: 1:00pm-2:00pm

**Note:** Please contact our office for Training Date or visit our website for details ([www.zohlgroupp.com/mdc](http://www.zohlgroupp.com/mdc))

## METHODOLOGY

This program will be conducted with:

- Interactive Lectures using PowerPoint presentation
- Discussions
- Practical Exercise
- Case Study
- Video Presentation

## TARGET AUDIENCE

- Software Engineers
- Application Developers
- IT Architects
- System Administrators
- Technical Support Specialists

## LOCATION

ONLINE or Mindset Discovery Center™@ZOHL, M2-6-08, Level 6, 8trium Tower 2, Bandar Sri Damansara, Kuala Lumpur (other Regions please contact our office)

## KEY TAKEAWAYS

After the completion of this certification, you will be able to:

- Achieve customer-centricity
- Gathering Rich Data

- Enhance the security measures
- Reduce the operational cost
- Use the smart devices properly
- Expect a better salary at the end of the month

## PRE-REQUISITES

There are no prerequisites for Certified IoT Foundation. Only the participants should definitely be familiar with cloud concepts and vocabulary.

## COURSE CONTENT

### DAY 1

#### Module 1: Overview of IoT & Concepts

- Introduction: Internet, Things and IoT
- Motivation and background - IoT Types, History and Evolution of IoT
- Industrial revolution and digital waves
- Technology trend and market potential
- Cyber-Physical Systems and differences among IoT, M2M, and
- IoT Facts and Figures Around IoT Application Areas

#### Module 2: IoT Business Objectives

- IoT Drivers
- Benefits for Business
- IoT Business: Opportunities, Benefits, and Challenges
- IoT Monetization Strategies and Models

#### Module 3: Enabling Technologies of IoT

- Social Media and Mobility in IoT
- Big Data and Analytics in IoT
- Cloud Computing in IoT

#### Module 4: IoT Ecosystem

- IoT fundamental building blocks
- Sensors for data collection
- Wired and wireless connectivity
- Platform to aggregate data
- Hands-on and practical exercise: real-time data collection and visualization

### DAY 2

#### Module 5: IoT Application and Use-Cases

- IoT applications and software development tools
- Hands-on and practical exercise: sending and receiving data with MQTT
- Hands-on and practical exercise: tracking International Space Station (ISS)

#### Module 6: Sensor and Actuator

- Device evolution and role of sensors
- IoT device anatomy
- Sensor types and properties

Customized In-House Training Program is available in the following areas:

Accounting & Finance | Administrative Skills | Career Development | Human Resources | Personal Development | Sales & Marketing | Leadership & Management | Workplace Essentials | Digital & Social Media Marketing | Cust Svc | SCM | Entrepreneurship | Soft Skills | HSE | Engineering | Telecoms | ICT | ISO | PM | TQM

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- Hands-on and practical exercise: noise, light intensity, temperature and proximity sensors

## Module 7: Gateway and Network

- Classification - PAN, LAN and WAN
- Transmission data rate and range
- Gateway specifications and examples
- Low power wide area network: LoRa, Sigfox and NBLoT
- Design exercise: IoT network design

## DAY 3

### Module 8: Middleware and Platform

- IoT platform: device management, application enablement, storage and cloud
- Platform architecture and requirement
- Review of major IoT platforms
- Hands-on and practical exercise: sensor data transmission and time-series database

### Module 9: Protocol and Standardization

- Protocol stack
- Messaging protocol
- Standard bodies and consortia
- IEEE, ETSI, ITU perspective

## DAY 4

### Module 10: IoT Security and Top Governance Issues

- IoT Security Challenges
- Causes of IoT Security Breaches
- IoT Security Risks

### Module 11: Summary - Basic Building Block of IoT - Architecture

- Architecture of IoT components
- Network Components Within IoT
- Explain the basic building blocks of IoT including Sensors, processors, gateways, and applications.
- Sensors and actuators.
- Relate to generic factor of sensors.
- Architectural layers of IoT.
- Working of IoT.
- Key requirements of IoT network.
- Communication technologies used in IoT including Wi-Fi, Bluetooth, Near Field Communication (NFC), ZigBee.
- Smart environment application and service domains.

## DAY 5

### Module 12: Practical Demonstration and Consideration

- Technical, business and social challenges
- IoT project design and proposal

- Hands-on and practical exercise: data streaming, storage, visualization and alert/notification
- Hands-on and practical exercise: complete sensor and actuator implementation

## Question & Answer Session

### Examination

- 60-minutes exam.
- 40-multiple choice questions (MCQ).
- 26 out of 40 - 65% is needed to pass.
- In case the participant does not score the passing percentage, they will be granted a 2<sup>nd</sup> attempt at no additional cost. Re-examination can be taken up to 30 days from the date of the 1<sup>st</sup> exam attempt.

### End of Program House-Keeping

- Program De-Briefing
- Feedback Questionnaire
- Closing Ceremony

Note: Course Content subject to further review

### COURSE FEE

**RM4,240** per person incl. 6% SST

(Fee inclusive of Course Material, Attendance Certificate, Professional Certificate, Exam Fees and Meals)

### CERTIFICATE

Participants will be issued a Certificate of Attendance/Accomplishment upon successful completion of this training program. Full attendance is a pre-requisite.



In addition, a **Professional Certificate** from **GSDC** will also be awarded to those who pass the Exam.

### WHY GSDC CERTIFICATION?

The Global Skill Development Council (GSDC) is an independent, vendor-neutral, international credentialing and certification organization for the emerging technologies:

- Advisory board members and SMEs are from around the world, drawn from different specializations.
- Supported by the world's most esteemed thought leaders from Yale, MIT, Stanford, Wharton, and Harvard.
- Hub of Trending Technologies and framework certifications.
- Content curated by Industry's best Subject matter experts.
- Webinars and Conferences.
- Training Partners Across The Globe. For Malaysian market ZOHL Consultancy Sdn Bhd has been ap-

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pointed as GSDC Training Partner.

## HRDF SBL KHAS

Claimable under HRDF SBL KHAS Scheme (for Companies contributing to HRDF)

## REGISTRATION METHOD

- Online:** <https://zohlgroup.com/mdc/certification-programs-registration/> **OR**
- Download this brochure at: <https://zohlgroup.com/mdc/certification-programs/> and fill up the required information. Then please fax to: 03.6279.0663
- Or contact our office at: 03.6279.9276 / 013.398.1038

## FACILITATOR

**Dr Hafizal Mohamad** is the recipient of ASEAN Outstanding Scientist and Technologist Award (AOSTA) 2017 and Top Research Scientist Malaysia (TRSM) by Academic of Sciences Malaysia.



Currently, he is a Senior Staff Researcher at Corporate Technology Division, MIMOS Berhad. Passionate about creating a hyper-connected world, Hafizal now leads a team of committed researchers working on numerous projects related Internet of Things, sensors, cognitive radio and mesh networks. He has involved in complete technology development life cycle from idea creation until commercialization, whereby he held various portfolios related to basic research, applied R&D and product development. He is the co-inventor of 36 filed patents and nine granted patents in the field of wireless communications. He served as a visiting fellow at NICT, Japan in 2005.

He has published over 100 journal and conference papers. He has delivered keynote and expert talks at national and international events. Hafizal is a Senior Member of the Institute of Electrical and Electronics Engineers (IEEE), USA and he has served in various leadership roles in the IEEE. Hafizal has also been appointed as an expert panel for technical committees related to E&E and ICT areas.

Hafizal earned BEng (first class) and PhD degrees in electronic engineering from University of Southampton, UK. He is a registered professional engineer with Board of Engineer Malaysia and a certified HRDF trainer.

\*Note: Trainer availability is subject to change



## REGISTRATION FORM

Participant#1: \_\_\_\_\_

Position: \_\_\_\_\_

IC No: \_\_\_\_\_

Participant#2: \_\_\_\_\_

Position: \_\_\_\_\_

IC No: \_\_\_\_\_

Training Date: \_\_\_\_\_

Training Venue: \_\_\_\_\_

Organization: \_\_\_\_\_

Address: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Position: \_\_\_\_\_

Tel: \_\_\_\_\_

Fax: \_\_\_\_\_

Email: \_\_\_\_\_

Company Website: \_\_\_\_\_

## PAYMENT

**CASH:** RM \_\_\_\_\_ **OR**

**CHEQUE** No: \_\_\_\_\_

Please fax your bank-in slip to 03.6279.0663 or scan your bank-in slip and email to [training@zohlgroup.com](mailto:training@zohlgroup.com)

\*Please make your cheque payable to:

**ZOHL Consultancy Sdn Bhd**



Account No:  
**514392303373**

Signature & Company Stamp

## Note:

- Date & venue of seminar subject to changes
- Payment must be made 7 days before the training date
- Registration cancelled 7 days prior to the event is subject to RM100 service charge per participant
- No refunds for notice received less than 7 days prior to the event. A substitution may be made at any time at no extra charge.
- Program content may change subject to revision by our consultants from time to time.
- Full fee is required with your registration. 5% Group discount is available - min 3 pax.

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