

Internet of Things Egypt Forum

IoT Education Curriculum



IoT Education Curriculum

□ Organizations



□ Online Courses & Specialization



- The course includes the following modules
 - ▣ Introduction on IoT
 - ▣ Detailed setup for Intel Edison, Intel Galileo v1 and v2
 - ▣ Set of labs to discover IoT programming basics on Linux
 - ▣ Case studies and real life IoT projects

Intel offers an open source reference

Product and Solutions Training

For Industrial Control Systems Product

- ❑ “Networking Fundamentals for Industrial Control Systems (INICS)” course
- ❑ “Control Systems Fundamentals for Industrial Networking (ICINS)” course

Certification

- ❑ Cisco Industrial Networking Specialist certification
- ❑ CCNA Industrial certification

- Networking Fundamentals for Industrial Control Systems (INICS)
 - Designed to teach Industrial Engineers and Control System Technicians basic IP and networking concepts.
 - Covers an introduction to protocols, concepts in networking and introductory overview of Automation Industry Protocols.

- Control Systems Fundamentals for Industrial Networking (ICINS)
 - Designed to teach IT and Network Engineers basic concepts in Industrial Control systems.

 - Covers an introduction to automation industry verticals, automation environment and introductory overview of the industrial control networks.

- The Internet of Things Training (2 days)
 - ▣ What is the Internet of Things (IoT)?
 - Concepts and Definitions of The Internet of Things
 - ▣ Overview of IoT connectivity methods and technologies
 - wireless 101, RF 101, ZigBee, RFID, ..
 - ▣ Evaluation of of The Internet of Things
 - Platforms, Mobile integration, Deployment,

- Provides IoT Deep Dive Training (3 days)
 - ▣ IoT Architecture
 - ▣ Sensors
 - ▣ IoT World
 - ▣ Communication
 - ▣ End2End Cold Chain Demo
 - ▣ Cloud Computing & Data Analysis
 - ▣ Design considerations and IoT Security
 - ▣ Build IoT Solutions For Home Automation and Logistics as part of this training
 - ▣ IoT Opportunities

- Hands on (Includes Axelta IoT Hardware Kit) (2 days)
 - Sensor Practical
 - Communication Practical
 - Cloud Practical
 - Big Data Practical
 - Web services Practical

- Smart cities application training
 - ▣ Internet of Things (IoT)
 - ▣ Machine to Machine Communication Training
 - ▣ Smart Cities Essentials Training

- Internet of Things (IoT) & Big Data Analytics Training
 - ▣ Big Data for IoT
 - ▣ Big Data analytics techniques
 - ▣ Architecture of IoT
 - ▣ IoT technologies
 - ▣ IoT communication and networking
 - ▣ IoT deployment and management
 - ▣ New IoT product- product requirement document for IoT
 - ▣ Machine learning for intelligent IoT
 - ▣ Security in IoT implementation
 - ▣ Cloud based IoT platforms
 - ▣ Common IoT systems

- Machine to Machine Communication Training
 - ▣ M2M architecture
 - ▣ M2M and networking
 - ▣ M2M cellular technologies
 - ▣ M2M short range technologies
 - ▣ M2M deployments
 - ▣ M2M Security

- Smart Cities Essentials Training
 - ▣ Smart cities key areas
 - ▣ Smart cities technologies
 - ▣ The challenges
 - ▣ Smart cities: future trends
 - ▣ IoT technologies
 - ▣ Smart grid
 - ▣ Wireless and wireline communications
 - ▣ Home area networks
 - ▣ Generation and Transmission
 - ▣ M2M deployments

- Specialization includes 5 courses
 - ▣ Introduction to the Internet of Things and Embedded Systems **(4 weeks, 1-3 hours per week)**
 - ▣ The Arduino Platform and C Programming **(4 weeks)**
 - ▣ Interfacing with the Arduino
 - ▣ The Raspberry Pi Platform and Python Programming for the Raspberry Pi
 - ▣ Interfacing with the Raspberry Pi

This specialization is created by Donald Bren School of Information and Computer Sciences in University of California, Irvine.

- This specialization includes 5 courses
 - ▣ How did we get here? **(2 weeks)**
 - ▣ Setting Up Your DragonBoard™ Development Platform **(10 weeks)**
 - ▣ Sensing and Actuation From Devices
 - ▣ Communication Technologies
 - ▣ Multimedia Technologies
- Build Internet of Things Capstone: Mobile Surveillance

This specialization is created by California Institute for Telecommunications and Information (Calit2) in University of California, San Diego.

Thank You