



Government Official Training[Advanced] in Internet of Things

BLENDED LEARNING UNDER FUTURE SKILLS PRIME

An Initiative of Ministry of Electronics and Information Technology

NIELIT Chennai-Co-lead Centre in Internet of Things

OBJECTIVE:

To Provide an understanding of Internet of Things and its applications in various domains to the Government Officials. The course also details the technical insights to the Government officials involved in planning and RFP preparation.

LEARNING OUTCOMES:

Know-hows on technical aspects of IoT domain with understanding of IoT architecture, Introduction to microcontrollers and interfacing, sensors and actuators, IoT communication protocols, data exchange protocols etc. The officials also get an awareness on management aspects of the IoT systems.

PRE-REQUISITES: Govt Officials with basic knowledge of Computer Architecture / Embedded Systems/ Networking

COURSE FEE: Nil (Program is funded by MeitY, GoI for Government Officials).

COURSE OUTLINE: [Blend with Theory & Demos]

40 Hours

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| 01: Fundamentals of IoT: Government department specific case study: problem statement Introduction to IoT, Sensing, Actuation, Basics of Networking, Challenges in IoT and Other Use Cases of IoT. | 4 hrs |
| 02: Introduction to Microprocessors and Microcontrollers: Introduction to MCU Families - Overview of ARM Cortex-M architecture, CMSIS standard, Introduction to Peripherals, Serial protocols - UART, SPI, I2C, ADC and DAC | 6 hrs |
| 03: Sensors & Actuators required for various IoT applications: Sensors and actuators for different IoT use cases, selecting sensors and actuators considering field limitations, Sensor calibration and maintenance issues | 6 hrs |
| 04: Wireless Technologies: TCP/IP Model- WLAN, IEEE 802.15.4 Wireless PAN standard - ZigBee/6LoWPAN, Bluetooth/BLE Basics, Cellular Technologies, Short range communications, Wireless Low Power Wide Area networks and GPS. | 10 hrs |
| 05: Edge Computing and Protocols: Communication Models, Data Exchange Formats, MQTT Protocol, RESTful Architecture, HTTP REST Model, CoAP Protocol, IoT security, Gateway Design, Principles of Edge Computing and IoT platforms | 10 hrs |
| 06: IoT Application Demos | 4 hrs |
| 07: Live MCQ (theory + practical) based assessment exam | Within 7 days of the completion of the course |

- For registration and more information, Contact:
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