NIELIT
रा.इ.सू.प्रौ.सं

National Institute of Electronics and Information Technology

(An ISO 9001:2015 certified Organization)
Ministry of Electronics and Information Technology
Government of India

Online Course Prospectus

Internet of Things (IoT) using Arduino

Course Description

The course is planned to cover topics that are designed to impart specific knowledge related with the domain of Internet of Things (IoT) so that a fresh graduate / diploma holder who is undergoing the program will get exposed to IoT architecture. The candidate will work on IoT hardware platforms used and associated software, building wireless sensor networks, accessing things through networks, gateways and interfacing with cloud. This will give a chance for the participant to prepare for jobs in leading companies/ industries/ research and development organizations that are dealing with IoT related projects.

Click Here to Register

OR

Scan QR Code

Who can attend?

Anyone who is interested to build their career in IoT, including:

- Beginners
- Professionals looking to upgrade their knowledge and expertise in this area.
- Students who wish to pursue a career in IoT.

Course Content

❖ Introduction to IoT
  - IoT ecosystem
  - Characteristics of IoT
  - Building Blocks of IoT
  - IoT Levels
  - IoT Architecture
  - IoT Protocols
  - IoT Applications

❖ Embedded System Basic Designs
  - Embedded System
  - Microprocessors and it's applications
  - Microcontrollers and it's applications

❖ Learning Arduino Platform
  - Introduction to Arduino
  - Types of Arduino Boards
  - Arduino Uno Board and it's Description

❖ Learning Arduino Language
  - Arduino program Structures
  - Datatypes
  - Operators
  - Conditional Statements, Control Statements

❖ Basics of Sensors and Actuators using Arduino
  - Seven segments LED, RGB LED, Relay, Keypads
  - Sensor – IR, DHT11, HC-SR04, LDR, PIR
  - Autators – Servo motor and DC motor

❖ Control Embedded System devices using Arduino
  - Bluetooth Module – HC-05
  - NODEMCU wifi Module – ESP8266
  - Ethernet shield

❖ Project Work

Prerequisite

❖ A working knowledge of basic electronics and C/C++ programming language.

Duration

✓ 4 Weeks (without project) / 6 Weeks (with project)

The internship/industrial training programme includes about 40 Hrs of intensive interactive instructor-led online sessions and about 60 Hrs of practical assignments that student can perform at their end. In some training programmes, the facility of virtual lab can also be extended subject to availability. The six weeks programme includes two weeks (20 Hrs.) of project that student is required to develop and a presentation is to be made by student (in Online mode) to the faculty.

Certificate

e-Certificate will be issued to each participant after completion of the training. The participant needs to maintain minimum 75% attendance during the online classes and is required to score minimum 50% marks in the online test in order to successfully complete the course.

Preferable Requirements

❖ A computer with an internet connection and download privileges.
❖ Student must latest computer/laptop with preferably 4 GB RAM or higher
❖ Software: Arduino (can be downloaded from official website – https://arduino.cc)
❖ Hardware: Arduino Uno Board, Ethernet Shield, Bluetooth Module, NodeMCU and Sensors (DHT11, IR, HC-SR04. LDR, PIR), Jumper Wires, LEDs, Keypad, Relay.

How to Apply

Interested candidates may apply online on the link https://nielit.gov.in/haridwar/content/online-courses after submitting the Course Fee in following account:

Name	NIELIT Haridwar
Account Number	12922122001331
IFSC Code	PUNB0129210
Bank Name	Punjab National Bank
Branch	Pentagon Mall, SIDCUL, Haridwar

NOTE: Copy of transaction slip is required to be uploaded at the time of filling online form. Candidate may keep a copy of the same for future reference.

Terms and Conditions

1. In case, any registered candidate could not attend the online session due to technical issue at their side there will not be any refund of the course fee and the sessions will not be repeated.

2. In case, the online course is cancelled/postponed due to some technical issue at NIELIT side and new date is not convenient to the candidate, our liability is limited to the refund of the course fee and NIELIT shall not be responsible for any consequential damages.

Course Coordinator

Mr. Arpit Gupta
Ph: 9368349990, Email:haridwar@nielit.gov.in

Faculty Profile

Mr. Vinay Kant, B.Tech (ECE) and 5 years Experience in field of IoT.

NIELIT Haridwar is the Regional Centre of NIELIT in the state of Uttarakhand and is situated in SIDCUL Haridwar. It is well known for the advanced training programmes in the areas of Future Skills such as **Cloud Computing, Machine Learning, Artificial Intelligence, Internet of Things, MATLAB, Big Data, Embedded Systems etc** in addition to the various National Skill Qualification Framework (NSQF) aligned long-term and short-term courses in Electronics & Information Technology. The Centre has **MOUs** with various prestigious institutions and Universities of Uttarakhand for academic collaboration, technical support, summer/industrial training and internships of the students. The Centre provides a conductive learning environment with the state-of-the-art infrastructure and expert faculties.

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