

NATIONAL INSTITUTE OF TECHNICAL TEACHERS TRAINING & RESEARCH, CHANDIGARH

Electronics and Communication Engineering Department

in association with

Touch TECHNO, Delhi

cordially invites you to attend one week industry partnered online STC on

IoT and LoRaWAN Technology using Arduino

from 17/08/2020 to 21/08/2020

Under this STC you will learn the complete IoT chain and various links in it. You will also be able to design such system using various technologies like LoRaWAN, Wifi, and MQTT etc. This STC will start from basics of Embedded Systems (using Arduino) and then go up to designing a complete IoT system using various technologies.

Specially designed for scholars, faculties and industry people who are interested in IoT and wants to get started on it. This STC will give you a kick start.

Detailed Contents:

Day	Session 1 Topics	Session 2 Topics
1	Introduction to Embedded & IoT Systems <ul style="list-style-type: none"> Understanding Embedded & IoT Introduction to Arduino platform Installation of required software and hardware Operators, structures, commands in Arduino 	Understanding Arduino Programming <ul style="list-style-type: none"> Basic IO programming Operator, structure & commands Interfacing LED Controlling LED's brightness using PWM
2	Sensor Interfacing – Potentiometer, Light & Flame Sensor, Relay Module <ul style="list-style-type: none"> Interfacing potentiometer Interfacing relay module Interfacing light, flame Sensor Activity - Making a fire detection system 	Sensor Interfacing – Temp & Humidity, Ultrasonic Sensor, Buzzer Module <ul style="list-style-type: none"> Interfacing DHT11 sensor (Temp & Humidity Sensor) Interfacing Ultrasonic sensor and buzzer module Activity - Making an obstacle detection system
3	Cloud Integration - Thingspeak <ul style="list-style-type: none"> Introduction to ESP82 module Integration of ESP82 module with Arduino Sending UPLINK of sensor data using ESP82 module Sending DOWNLINK from cloud to arduino 	Overview of IoT & LoRaWAN <ul style="list-style-type: none"> Introduction to IoT Understanding IoT building blocks Understanding LoRaWAN & its advantages Configuring LoRa Gateway
4	LoRa Network Server Configuration <ul style="list-style-type: none"> Introduction to The Things Network Integrating LoRa Gateway to The Things Network Integrating LoRa End Node to The Things Network Sending Data to The Things Network – UPLINK 	LoRa Application Server Configuration <ul style="list-style-type: none"> Introduction to UBI Dots Integrating UBI Dots and The Things Network Sending UPLINK from LoRa Node to UBI Dots Sending DOWNLINK from UBI Dots to LoRa Node
5	Integrating LoRa Network Server to Various Cloud Platform <ul style="list-style-type: none"> Introduction to Thingspeak, TagoIO, Cayenne Integration of The Things Network to Thingspeak, Cayenne, TagoIO 	LoRa Node to Application Server Using MQTT <ul style="list-style-type: none"> Understanding MQTT Configuring LoRa gateway to send data to Thingspeak using MQTT

* All the sessions shall be conducted by single expert and there shall be complete continuity between sessions.

For Registration Visit:

NITTTR Chandigarh website: www.nitttrchd.ac.in and click on [Online Training/FDP \(2020-21\)](#)
or
Click on <http://www.nitttrchd.ac.in/sitenew1/core/stclink.php>

Other STC Details:

- Online Platform: Webex
- O. Plan No. ICTO-160
- Number of Sessions: Two Sessions per Day (One Hour Each)
- STC Dates: 17/08/2020 to 21/08/2020
- **STC Fee: Rs. 500/- for Faculty participants from AICTE approved Non-TEQIP institutions and for others as per NITTTR rules.**

For More Details Contact:**Dr. Balwinder Singh**

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