



# POORNIMA

INSTITUTE OF ENGINEERING & TECHNOLOGY

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FDP

on

IoT based Product Development (using Advanced Digital  
Manufacturing Equipment, Tools and Resources)

The banner features the Poornima Institute of Engineering & Technology logo and name, along with accreditation logos for AICTE and IDEA Lab. It includes a photograph of the institute's building. The program title is prominently displayed in a blue box. Below this, a yellow bar provides the dates (July 13-15, 2022), time (9.00 AM-04.00 PM), and venue (Idea Lab, PIET). Five faculty members are introduced with circular portraits and text boxes: Mrityunjai (Founder, Singgrid, Delhi), Prof. (Dr.) Dinesh Goyal (Principal & Director, Chief Mentor), Arun Kumar (Co-founder, Singgrid, Delhi), Udit Mamodiya (Assistant Professor, Coordinator), Nitin Mukesh Mathur (Assistant Professor, Co-coordinator), and Satish Kumar (Production Head, Singgrid, Delhi). An 'In Association with' section shows the Singgrid logo. Contact information for Udit Mamodiya is provided in a blue bar at the bottom.

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**Faculty Development Program on  
IoT based Product Development (using Advanced Digital  
Manufacturing Equipment, Tools and Resources)**

 July 13-15, 2022  9.00 AM-04.00 PM **Venue: Idea Lab, PIET**

**In Association with**

 **SINGGRID**

**RSVP:**  
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**Mrityunjai**  
Founder  
Singgrid, Delhi

**Prof. (Dr.) Dinesh Goyal**  
Principal & Director,  
Poornima Institute of Engineering & Technology  
Chief Mentor, PIET-AICTE, IDEA lab

**Arun Kumar**  
Co-founder, Singgrid, Delhi

**Udit Mamodiya**  
Assistant Professor,  
Department of Electrical Engineering,  
Coordinator, PIET-AICTE, IDEA lab

**Nitin Mukesh Mathur**  
Assistant Professor,  
Department of Mechanical Engineering  
Co-coordinator, PIET-AICTE, IDEA lab

**Satish Kumar**  
Production Head  
Singgrid, Delhi

## **DAY 1**

DATE: - 13 JULY, 2022

TIME: - 9:00 AM TO 4:00 AM

VENUE: - Idea Lab, PIET

Participants: - 40

The session started in BB31-Seminar Hall with Mr. Udit Mamodiya (CO-Coordinator, PIET-AICTE, Idea lab) as HOST with a “Ganesh Vandana” followed by lamp lighting by Dr. Dinesh Goyal (Principal & Director, PIET), Mr. Arun Kumar (Co-founder SincGrid, Delhi), Dr. Sama Jain (HOD), and inGrid team members. Followed by memento’s distribution Made in Idea Lab itself using Laser cutting machine to Sink Grid team.

Then,

Dinesh sir enlightened us all with his wise words and told us all the solo motive and necessity of this FDP. He also added, few words on the working experience with sinc grid team and fellow idea lab teammates.

Then, Arun sir took over and talked about the basic scheduled time table of this Three-Day FDP with all the participants.

Then,

All the participants were headed to the newly-built PIET-AICTE Idea lab with Arun sir. Furthermore, Day 1 was filled with software centric sessions under the guidance of Arun sir

Meanwhile, The Idea lab’s team was preparing for the next 2 days of hands-on practice.

Day 1 mainly focused on:-

### ARDUINO IDE

- Hands on Arduino IDE software
- Esp8266
- C programming
- Arduino Board Manager
- Code Compilation
- Error Handling

## **DAY 2**

DATE: - 14 JULY, 2022

TIME: - 9:00 AM TO 4:00 AM

VENUE: - Idea Lab, PIET

Participants: - 40

The FDP resumed with Arun sir resuming the remaining training of Arduino software and asked for the Home assignment he asked the Faculty's to do.

But That was just for the start and Main objective of Day 2 was Breadboard Connections

And hence the topics which were covered in the entire Day 2 were :-

- Bread Board
- Breadboard Connections
- Example Code push to esp8266
- Testing the board with the basic blink code
- Making web server from esp8266
- Controlling of led from web server
- Preparation for casing
- Key considerations for 3D printing

The main outcome for this whole FDP was to make a memento of an idea lab using all kinds of instruments now towards Day 3.

## **DAY 3**

DATE: - 15 JULY, 2022

TIME: - 9:00 AM TO 4:00 AM

VENUE: - Idea Lab, PIET

Participants: - 40

Now till day 3 faculty knew how to make the inner part of the product but didn't knew about the enclosure so day 3 mainly focused on Enclosure Development.

It required 3 to 4 machines and a black ipa spray for enclosure making

Day 1 and Day 2 was leaded by Arun sir but Day 3 was leaded by Satish sir and Naman Sir

The Enclosure development consisted of :-

- Enclosure development using Laser cutting

- Experimental ESP Fabrication using Laser Cutting
- Discussion on Electronic System Design and Manufacturing
- Open House for queries and other related topics

#### Machines/Tools Covered

- Laser Cutter
- PCB Router
- 3D Printer
- Solder station
- Multimeter

#### Key Outcomes of the Faculty Development Programme

- The programme is aimed at providing hands-on experience on various tools, machines and equipment.
- Working electronic prototype as takeaway.

## **SNAPSHOTS**













