



**Online Workshop  
on  
Embedded Application development with Swadeshi  
Processors  
(Shakti RISC V)**



**Date: 27<sup>th</sup> September 2021**

### **Course Description:**

This is an online, instructor – led certificate program which provides a thorough knowledge about the Shakti Processors, its programming and interfacing for internet of things (IoT) applications. Swadeshi processor are **Made in India** processors which will be the future processors used across world for the Internet of Things applications. This course will enhance your skills for using these swadeshi processor developed by IIT Madras for the IoT Applications.

### **Program Objectives**

To learn, Practice the programming on Shakti Processor for Internet of Things Applications. To get exposure in industry standard methodologies from the makers of the processors.

### **Who can attend?**

Students of Engineering (UG & PG) & MSc (Electronics), PhD scholars, faculty members and professionals from Industry/Startups.

### **Duration**

- Proposed length of the training: 10 Days. **20 Hours lecture 15 Hours practicals.**

| <b>Course Fee</b>   |                                     |
|---|-------------------------------------|
| <b>INR 3,000/- For Students</b>   | <b><a href="#">REGISTER NOW</a></b> |
| <b>INR 5,000/- For Faculty</b>  |                                     |
| <b>INR 8,000/- For Industry/Corporate</b>                                     |                                     |
| <b>Last date for payment and confirmation: 23<sup>rd</sup> September 2021</b> |                                     |

### **Payment Guidelines: -**

Online fund transfer can be made via your Internet Banking, Google Pay to the following account and proof of the same has to be uploaded during the registration.

#### **Account details:**

**Name of the Institute: National Institute of Electronics and Information Technology, Calicut.**

**Account Holder: Director NIELIT Calicut**

**Account No: 10401158037 Bank Name: SBI, NIT Chathamangalam**

**IFSC No: SBIN0002207 MICR Code: 673002012**

**For any queries WhatsApp to 9447769756, Please don't call, we will reply to you at the earliest.**

**Delivery Mode:** Online. Live classes followed by online assignments over LMS. Students should have Laptop/PC with high speed internet connectivity.

## Tentative Schedule

|                   |   |  |  |
|-------------------|---|--|--|
| Duration          | 1 weeks   |  |  |
| Tentative Timings | 10 am to 12.00 noon (Theory)<br>Lab/Assignments can be submitted online on Learning management Systems (Any Time) |  |  |
| Tentative dates   | 27 <sup>th</sup> September 2021 (Monday) to 8 <sup>th</sup> October 2021(Friday)                                  |  |  |
| <b>Syllabus</b>   |   |  |  |
| Day               | Session -1<br>10.00 AM – 12.00 PM   |  | Remote Lab<br>Duration : 3 Hours                           |
| 1.                | Overview of RISC V & Swadeshi Shakti Processor Architecture<br>(IITM- P)  |  | Remote Lab Familiarisation<br>(NIELIT)                     |
| 2.                | Overview of Shakti Peripherals (GPIO, UART)<br>(NIELIT)   | Embedded Programming with Shakti<br>(NIELIT) | Remote Lab<br>(NIELIT)                                     |
| 3.                | Interfacing Sensors & Actuators with Shakti (ADC, PWM, SPI, I2C) (IITM- P)  |  | Remote Lab<br>(NIELIT)                                     |
| 4.                | Overview Wireless Connectivity & Interfacing with Shakti<br>(NIELIT)  |  | Remote Lab<br>(NIELIT)                                     |
| 5.                | Ethernet lite with Shakti (IITM- P)   |  | Remote Lab<br>(NIELIT)                                     |
| 6.                | Mini Project (NIELIT & IITM- P)   |  | Mini Project (NIELIT & IITM- P)                            |
| 7.                | Mini Project (NIELIT & IITM- P)   |  | Mini Project (NIELIT & IITM- P)                            |
| 8.                | Overview of Building Custom Embedded Linux<br>(NIELIT)  |  | Remote Lab (NIELIT)  |
| 9.                | Linux Customization & driver development for Shakti Processors (IITM- P)  |  | Remote Lab (NIELIT)  |
| 10.               | Remote Lab (NIELIT)   |  | Remote Lab (NIELIT)<br>Online Assessment(NIELIT & IITM- P) |

IIT Madras Pravartak Technologies Foundation- **IITM -P**

National Institute of Electronics and Information Technology-**NIELIT**

Certificate: e-Certificate will be mailed to the registered email address after completion of the course.

## Course Materials

Lectures Notes will be made available in the LMS

### Coordinators

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