



**NATIONAL INSTITUTE FOR TECHNICAL
TRAINING AND SKILL DEVELOPMENT**

राष्ट्रीय तांत्रिक प्रशिक्षण आणि कौशल्य विकास संस्थान

Embedded Aurdino

Course Syllabus

Learn

Think

**Winter Internship
Program**



Execute

**Get the experience of learning with IIT Bombay & VJTI Alumni
with Internship Certificate**



Embedded Arduino

Course Syllabus

Module 1

- 1.1 Introduction to Embedded System with Arduino
- 1.2 Scope of Arduino in Embedded Systems

Module 2

- 2.1 Introduction to Arduino series
- 2.2 Hardware architecture of Arduino controller Series
- 2.3 Controller I/O ports
- 2.4 Memories of controller
- 2.5 Concept of Serial communication ,Interrupt etc.

Module 3

- 3.1 Introduction of Embedded Arduino Software



- 3.2 Introduction of Embedded C Programming and programming concepts for Arduino
- 3.3 Introduction of program flashing and error correction

Module 4

- 4.1 I/O interfacing concept
- 4.2 Led Blinking logic and delay generation routine

Module 5

- 5.1 Matrix keypad interfacing logic and concept
- 5.2 Introduction of key pad interfacing using polling method
- 5.3 Matrix keypad programming
- 5.4 Practical project based on matrix keypad

Module 6

- 6.1 Introduction to serial communication
- 6.2 Serial communication concept



- 6.3 Introduction of serial communication firmware and registers
- 6.4 Serial communication programming
- 6.5 Practical application based on Serial communication

Module 7

- 7.1 Introduction of interrupts in controller
- 7.2 Interrupt logic and concept
- 7.3 Interrupt routines / programming
- 7.4 Key interfacing using interrupt
- 7.5 Practical application based on interrupt

Module 8

- 8.1 Introduction of ADC
- 8.2 ADC interfacing
- 8.3 ADC programming
- 8.4 Practical project design based on RFID technology
with Arduino



Module 9

- 9.1 Introduction of I2C Protocol
- 9.2 I2C protocol interfacing in real application
- 9.3 I2C module programming
- 9.4 Practical project design based on I2C protocol with Arduino

Module 10

Practical designing of a project based on above technology
with Arduino Numbers :

- 1 Traffic Light System
- 2 Student Attendance System
- 3 Electronic Voting Machine (EVM)
- 4 Quiz Competition Design
- 5 Digital Notice Board
- 6 Festival Lights