KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY

Deemed to be University U/S 3 of the UGC Act, 1956

Established : 1997

SCHOOL OF ELECTRONICS ENGINEERING

Embedded System

DESIGN

with IoT

SUMMER TRAINING 2025

COURSE OBJECTIVE

This course provides a comprehensive exploration of Embedded System Design using STM32 and different sensor, IoT.Student will learn the different interfacing modes and utilizing different resources to design a IoT based Systems.

- CERTIFICATES ON COMPLETION
- HYBRID MODE TRAINING
- 20 HOURS | 40+ PROJECT

COURSE OUTCOME

STM32 Design

Students will successfully develop and design an Embedded System based on STM32 based Microcontrollers.

Embedded Proficiency

Students will demonstrate proficiency in Embedded C coding to interface different sensors a need to complete an IoT based System.

Peripheral Integration

Students will be able to integrate different peripherals as well as communicating with different HW using HW- Communication or Wirelessly.

COURSE FEE

KIIT Affiliation	Rs. 4000/-*
Other Affiliation	Rs 5000/-*

*No Fooding & Lodging

INSTRUCTORS

- Prof. Sarita Nanda
- Prof. J. K. Das
- Prof. A. K. Pati

MODULE DESCRIPTOR FOR THE COURSE

MODULE 1

- Introduction to STM2 ARM Architecture and its Features
- STM32 HAL Drivers and Clocking Circuits
- Timers and DMAs

MODULE 2

- Programming the GPIO with and without Interrupt
- Programming UART and 1 wire communication
- Programming I2C and SPI
- Programming ADC with and without DMA
- Programming the timer: PWM, Capture and encoding mode

MODULE 3

- Interfacing WiFI and Bluetooth with STM32
- Interfacing DC, Stepper and BLDC motor with STM32
- DAC interface with STM32 and waveform Generation
- Communication between 2 STM32 using I2C/SPI/Wireless

MODULE 4

- Debugging the STM32
- Building a small Embedded System Project