lendi **Institute of Engineering & Technology**
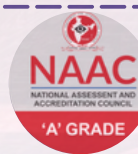*An Autonomous Institution*
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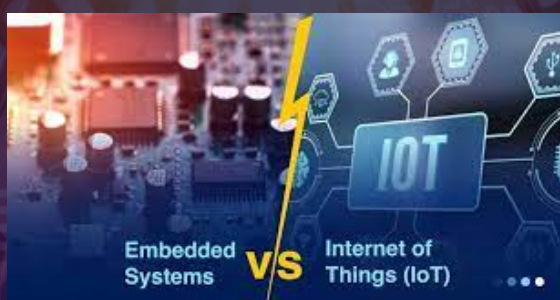NBA ACCREDITED BY
NAAC 'A' GRADE
lendi IEEE STUDENT BRANCH

Department of Electronics and Communication Engineering

Summer Internship

"Industry-Oriented Internship on Semiconductor Technology, Embedded Systems & AI"

MODULES TO BE COVERED

01 Microcontroller Programming and Applications

02 Embedded Systems with Arduino

03 Embedded Systems with STM32

04 Edge AI Applications using NVIDIA Jetson

DURATION & TIME

- May 26 – June 21, 2025
- 3 Hours per Day

VENUE

R & D Centre,
Lendi Institute
of Engineering &
Technology, Vizianagaram.

STEPS TO BE FOLLOWED :

- Registration via QR Code.
- Shortlisting and Intimation.
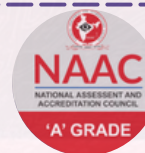- Payment of Fee.

CO-ORDINATORS

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Registration

Registration Fee
1000/-

Schedule

Week 1: 8051 MicroController and Applications (May 26 – May 31)

Day	Topic	Theory (1 hr)	Hands-on (2 hrs)
Day-1	Introduction to 8051	Overview, Architecture, Features	LED Blinking – Simulation in Proteus and Testing on Hardware
Day-2	LED and Switch Interfacing	I/O Port Interfacing Concepts	Simulation in Proteus and Testing on Hardware, with Practice Tasks
Day-3	DC Motor Control using L293D	Motor Driver ICs (L293D) and Control Logic	Simulation in Proteus with Tasks
Day-4	LCD Interfacing	LCD Interfacing Concepts and Timing Diagram	Simulation in Proteus and Testing on Hardware, with Practice Tasks
Day-5	Interfacing Sensors and Other Input Devices	Interfacing Analog and Digital Sensors	Simulation in Proteus and Hardware Testing
Day-6	Mini Project Development	Mini Project Planning and Application Areas	Guest Lecture with Eminent Industry Expert

Week 2: Embedded Systems with Arduino (June 2 – June 7)

Day	Topic	Theory	Hands-on
Day 1	Intro to Embedded & Arduino	Microcontrollers, Arduino IDE	Blinking LED, Serial Monitor
Day 2	Digital I/O & UART	Debouncing, UART Basics	Switch-controlled LED, UART Communication
Day 3	Analog I/O & PWM	ADC, PWM Concepts	Potentiometer Read, PWM LED, LM35
Day 4	Timers & Interrupts	Timer Overview, Interrupts	Timer LED, External Interrupt
Day 5	Communication Protocols	I2C, SPI Overview	I2C LCD, Sensor Interface
Day 6	Mini Project Development	Mini Project Planning and Application Areas	Guest Lecture with Eminent Industry Expert

Schedule

Week 3: Embedded Systems with STM32 (June 9 – June 14)

Day	Topic	Theory	Hands-on
Day 1	STM32 & IDE Setup	ARM Cortex-M3, STM32CubeIDE	LED Blink with Blue Pill
Day 2	GPIO & RCC	HAL Programming, Clocks	Button & LED Control
Day 3	Timers & Interrupts	SysTick, Interrupt Handling	Timer LED Toggle, Button Interrupt
Day 4	ADC & PWM	ADC Channels, PWM via Timer	Potentiometer Read, PWM LED
Day 5	UART & I2C	Communication Protocols	UART Serial, I2C OLED
Day 6	Mini Project - STM32	Project Planning	Sensor Dashboard, Fan Controller

Week 4: NVIDIA-based AI Applications (June 16 – June 21)

Day	Topic	Theory	Hands-on
Day 1	NVIDIA Jetson Overview	Jetson Nano/TX2 Architecture	Jetson Setup, Ubuntu, GPIO Blink
Day 2	AI Basics on Edge	Intro to AI, DNN, CNN	Running Pre-trained AI Models
Day 3	Vision-Based Systems	OpenCV, Image Processing	Face Detection on Jetson
Day 4	Object Detection	YOLO, TensorRT	Real-time Object Detection
Day 5	Mini Project – Jetson	AI + Sensors Integration	Smart Surveillance App
Day 6	Internship Review + Valedictory	Final Demos, Feedback	Certificate Distribution

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Resourse Persons

1. Dr. Hari Pattima, Silicon designer, AMD, Hyderabad.
2. Mr.D Suryanarayana, Analog Design Engineer, Intel, Bengaluru.
3. Dr. Suman Kumar Mitra, Design Engineer, Synopsis Technologies.
4. Mr. Mukul Jangid, Design Engineer, Cadre Design Systems, Noida.
5. Mr. K. Manikanta, MK Embeded Solutions, Visakhapatnam.
6. Dr. R. Santosh, Assoc. Prof, ECE, LIET.
7. Mr. B. Rama Mohan, Assoc. Prof, ECE, LIET.
8. Mr. B. Hemanth Nag, Assoc. Prof, ECE, LIET.
9. Mr. S.S. Kiran, Asst. Prof, ECE LIET.
10. Mr. S. Suresh Kumar, Asst. Prof, ECE, LIET.
11. Mr. M. Satish, Asst. Prof, EEE, LIET.
12. Mr. B. Ramana Babu, Asst. Prof, CSE, LIET.
13. Mrs. S. Durga Madhuri, Asst. Prof, ECE, LIET.