LAKIREDDY BALI REDDY COLLEGE OF ENGINEERING
(Autonomous Status Since the Academic Year 2010-11 & Extended up to 2031-32)
NAAC Accredited with CGPA of 3.20 on 4-point scale at 'A' Grade NIRF-2022 (Positioned in the Band of 251-300 in the Engineering Category)NIRF-2023 (Positioned in the Band of 101-150 in the Innovation Category)
NBA Accredited under Tier-I (ECE, EEE, CSE, IT, ME, CIV, ASE)
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Approved by AICTE, New Delhi and Affiliated to JNTUK, Kakinada
L.B.Reddy Nagar, Mylavaram-521230, N.T.R Dist., Andhra Pradesh, India.
Department of Electronics and Communication Engineering

Dt:17.9.2024

Report on 3-Days workshop on "Programming & Interfacing with Arduino"

Event Type:	Workshop
Date / Duration	9th Sep 2024 to 11th Sep 2024 (For ECE-A & B Sections) 12th Sep 2024 to 14th Sep 2024(For ECE-CSection)
Resource Person	Mr.P.S.Satya Kumar, SRC e-Solutions
Name of Coordinator(s)	1.Dr.M.V.Sudhakar Reddy 2.Mr.Ch.Mallikharjuna Rao
Target Audience	I Semester B.Tech ECE Students(A,B & C sec)
Total no of Participants	182 No
Objective of the Event	To Expose the student to the design Environment of Embedded system

Outcome of the Workshop:

1. **Hands-on Learning**: Students learn by doing, which helps them understand how electronics and coding work together.
2. **Improved Programming Skills**: They get better at writing code, especially using C/C++ for real-world projects.
3. **Hardware Interfacing**: They learned how to connect sensors and devices like motors or lights and sensors to an Arduino, making projects interactive.
4. **Practical Projects**: Students will develop real time applications like home automation or Various IOT applications.
5. **Problem-Solving Skills**: Students can able to troubleshoot issues with hardware and software, which builds critical thinking.
6. **Teamwork**: By working on group projects, they improved collaboration skills.
7. **Boosts Career Opportunities**: Gaining Arduino knowledge makes students more attractive for jobs in tech fields.

Description/Report on workshop:

SCOPE: Experimenting with hardware, software and innovating is the path of today's engineer, where students need a start to master the hardware and the basic functionality to convert their ideas into reality and then to a product that contributes something innovative to the society at large.

The workshop on "**Programming & Interfacing with Arduino"** is conducted for 3-Days to I-semester B.Tech ECE students. The workshop began with inaugural address by Dr.G.Srinivasulu, Professor & HOD of ECE ,who highlighted the significance of the training. It was mentioned that with the technology evolving faster the students should always update themselves with the current trends. Irrespective of running behind non-core jobs, students

need to strength their core concepts to build carrier in latest technologies of Electronics & Communication Engineering.

Dr.M.V.Sudhakar Reddy,Mr.CH.Mallikharjuna Rao who are the Coordinator's of this workshop, have informed the students about initiatives taken by the department to enhance students skill sets as per the requirement of the industry needs.

The concepts which are discussed on each session of the workshop by the mentor Mr.P.S Satya Kumar form SRC e-solutions are as follows.

Day 1 (Session 1)

Introduction to Microcontroller

- What is Microcontroller?
- Difference between Microcontroller and Microprocessor
- Microcontroller architecture and Interfacing
- Introduction to Microcontrollers & the Arduino Platform
- How can we use microcontroller in our circuits

Introduction to Programming Language

- Programming Languages- Assembly Vs Embedded 'C'
- Microcontroller Programming using Embedded 'C'

Day 1 (Session 2)

Introduction to software tool chain

- Software Installation
- Getting started with the Arduino IDE to start writing your first program
- Writing your First 'Embedded C' Program

Interfacing of I/O devices

- Interfacing of LED with Arduino
- Interfacing of switch with Arduino
- Interfacing of Buzzer with Arduino
- Interfacing DC motor with Arduino
- Pwm technique base led,buzzer,motor control with arduino

Day 2 (Session 1)

- Sensors and actuators introduction
- Interfaing with digital devices
- Interfacing of Analog Devices with Digital World
- Serial communication with Arduino
- Interfacing and programming with ldr sensor

Day 2 (Session 2)

- Interfacing and programming with ir sensor

- Interfacing and programming with ultrasonic sensor
- Interfacing and programming with soil moisutre sensor
- Interfaing and programming with servo motor

Day 3 (Session 1)

- Interfacing with 16*2 lCD
- Programming with 16*2 LCD with hello world program
- Ir Sensor interfacing and programming with 16 *2 lcd
- ldr Sensor interfacing and programming with 16 *2 lcd
- Tank level monitoring with ultrasonic sensor and buzzer

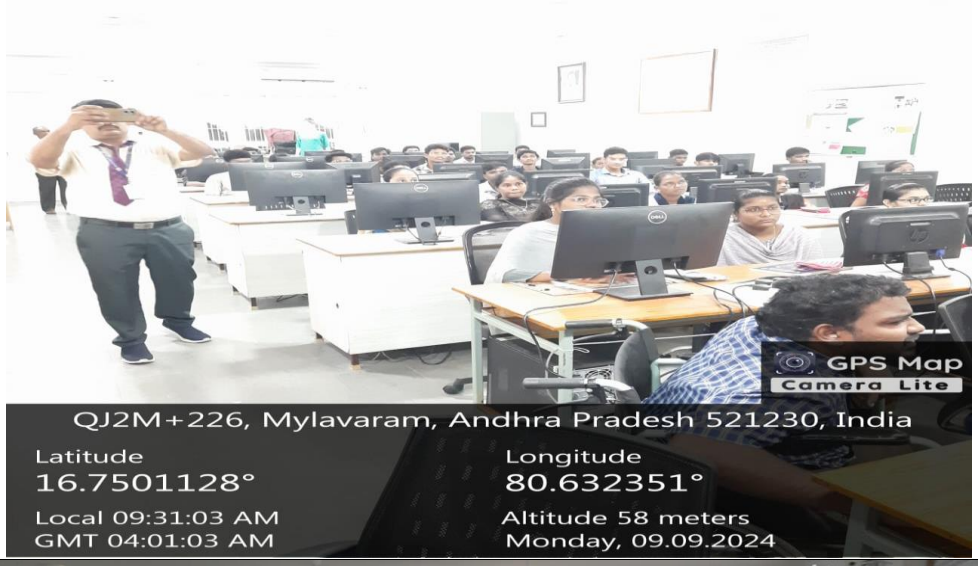
Day 3 (Session 2)

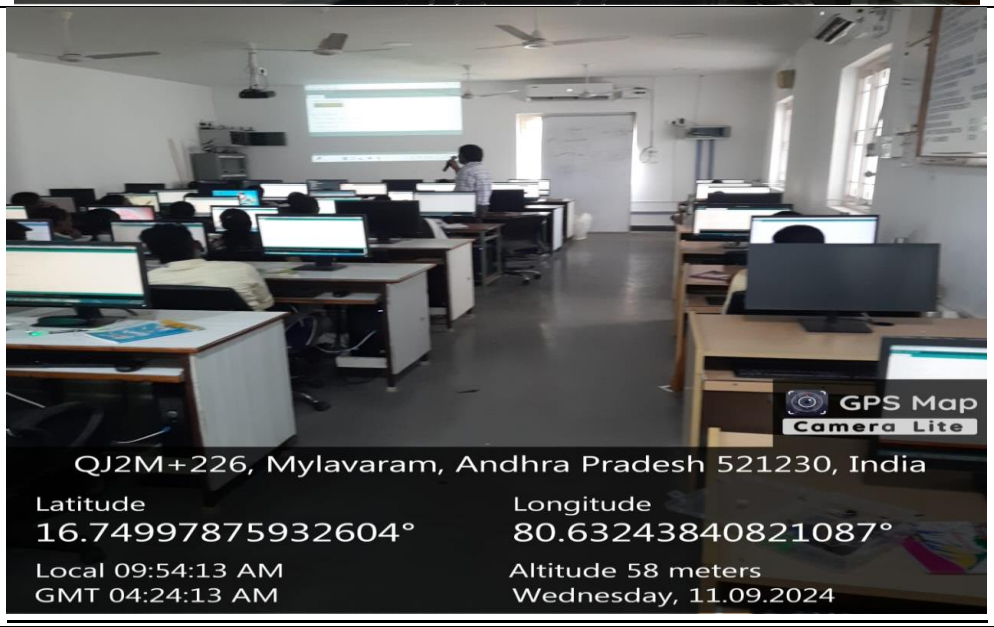
- Home appliances control through arduino serial moniter
- Automatic plant watering system project using soil moisture sensor and motor
- Automatic street light using ldr project
- Temperature and humidity monitoring using arduino

Industrial monitoring and controlling with ir,ldr,buzzer,led and lcd devices

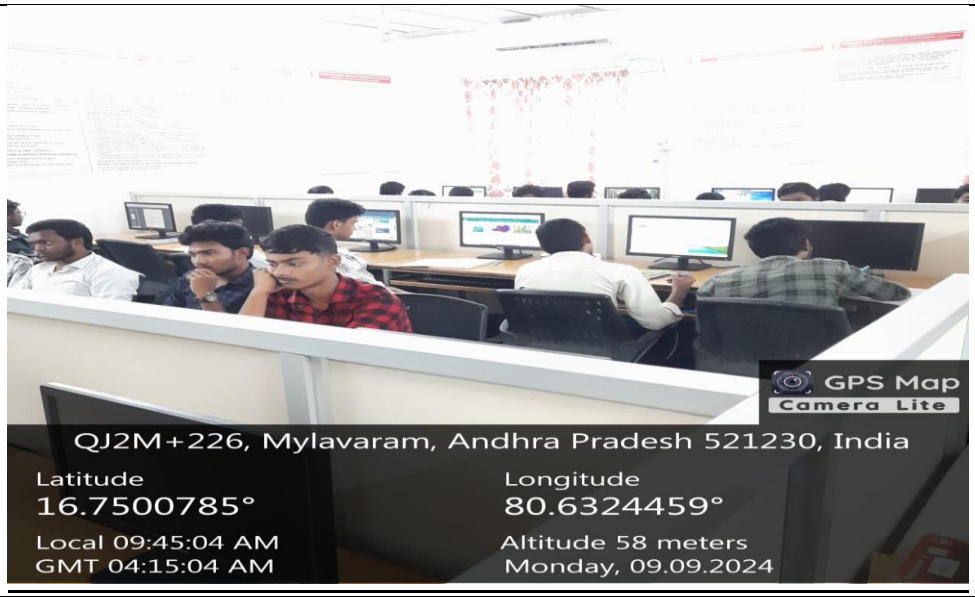
Workshop Banner

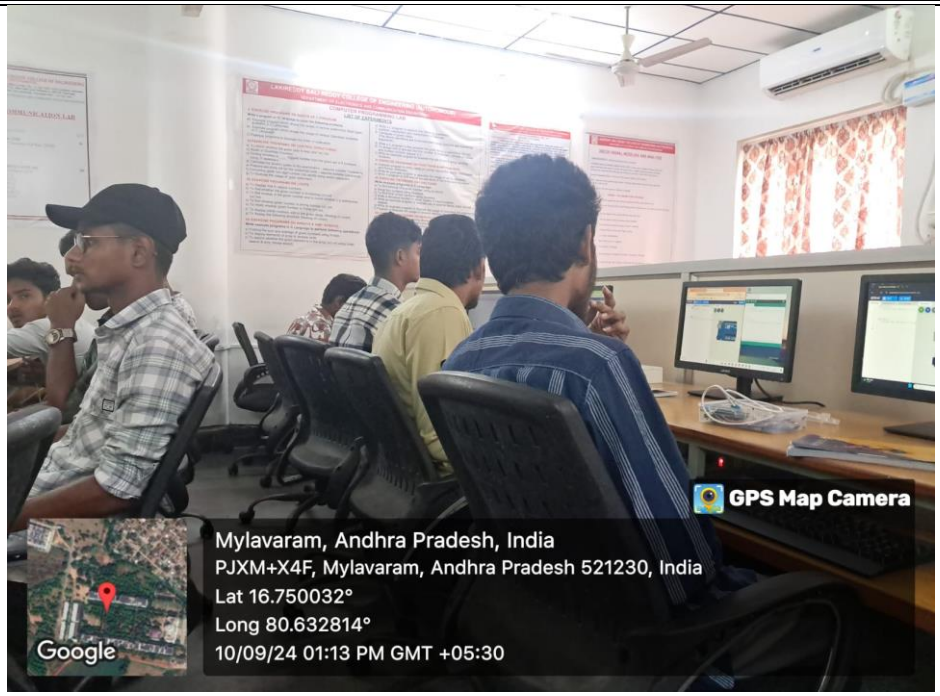
ECE-I-Sem-A section workshop Photos

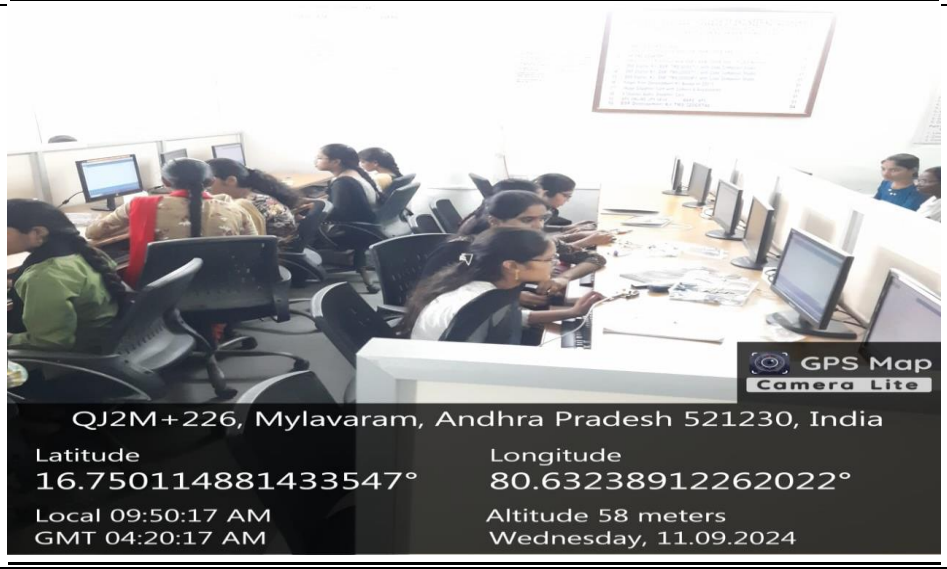




ECE-I-Sem-B- Section workshop Photos







ECE-I-Sem-C section workshop Photos