

# Techno India NJR Institute of Technology

### Academic Administration of Techno NJR Institute

## Lab Deployment

Name of Faculty: Dr. Vivek Jain Subject Code: 7EE4-21

Subject Name: Embedded Systems Lab SEM: VIII

Department: Department of Electrical Engineering

Total No. of Labs Planned: 12

#### COURSE OUTCOMES

At the end of this course students will be able to:

CO1:To teach the fundamentals of Embedded sytems.

CO2: To clarify the way in which circuits are designed using Microcontrollers AND MICROPROCESSOR for various applications.

CO3: To make the Student understand use of microcontroller and microprocessor in real life application

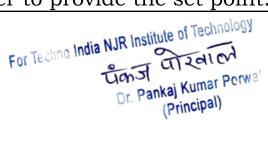
CO4: To give students an intuitive feeling of how microcontroller circuits operate.

For Techno India NJR Institute of Technology

Tand UT24100

Dr. Pankaj Kumar Porwal (Principal)

Labs	Name of Experiment
No.	-
1	Introduction to Embedded Systems and their working.
2	Data transfer instructions using different addressing
	modes and block transfer.
3	Write a program for Arithmetic operations in binary and
	BCD-addition, subtraction, multiplication and division
	and display.
4	Interfacing D/A converter & Write a program for
	generation of simple waveforms such as triangular,
	ramp, Square etc.
5	Write a program to interfacing IR sensor to realize
	obstacle detector.
6	Write a program to implement temperature measurement
	and displaying the same on an LCD display.
7	Write a program for interfacing GAS sensor and perform
	GAS leakage detection.
8	Write a program to design the Traffic Light System and
	implement the same using suitable hardware.
9	Write a program for interfacing finger print sensor.
10	Write a program for Master Slave Communication
	between using suitable hardware and using SPI
11	Write a program for variable frequency square wave
	generation using with suitable hardware.
12	Write a program to implement a PWM based speed
	controller for 12 V/24V DC Motor incorporating a
	suitable potentiometer to provide the set point.



#### **TEXT/REFERENCE BOOKS**

- 1. Microprocessor Architecture: Programming and Applications ith the 8085/8080A, R. S. Gaonkar ,Penram International Publishing, 1996
- 2. Computer Organization and Design The hardware and software interface D A Patterson and J H Hennessy ,Morgan Kaufman Publishers.
- 3. Microprocessors Interfacing, Douglas Hall, Tata McGraw Hill, 1991.
- 4. The 8051 Microcontroller, Kenneth J. Ayala, Penram International Publishing, 1996.