

**Department
of
ELECTRONICS AND COMMUNICATION ENGINEERING**



Stanley College of Engineering & Technology for Women

Affiliated to Osmania University

**ORGANIZING A WORKSHOP
ON
“HARDWARE CIRCUIT DESIGN - TRANSISTOR LEVEL”
IN ASSOCIATION WITH**



17th - 18th September, 2011

Workshop Coordinators

Mr. Charles Daniel. R (Asst. Professor)
Department of ECE

Mrs. Swaroopa (Asst. Professor)
Department of ECE

Transistor:

Circuit design training -Transistor level:

“ **Circuit design training**” under Transistor level is a two day program which involves the learning of fundamentals of core electronics and design of ten different embedded circuits with each circuit involving its own complexities. The modules designed by students can also be used as their B-Tech Projects. Any further guidance on projects if required by the students would be given by the technical team through an online or offline interaction.

The Training content for each day and session is as follows:

Day-1:

Session – I

- Introduction to Core Electronics
- Overview of Resistance, Diodes
- Experiment on Diode's Operation
- Introduction to Transistors
- Design of a Switch circuit to control a Light Emitting Diode

Session – II

- Introduction to Amplifiers
- Design of an Amplifier circuit to control the intensity of LED
- Overview of Gates
- Design of a NOT gate circuit
- Introduction to Cascading of Transistors
- Design of a Control switch circuit for the NOT Gate

Session – III

- Introduction to Capacitor, RC Circuit, Time Constant
- Design of RC based Timer circuit to achieve user defined delay
- Design of a LED blink circuit using RC based timer
- Introduction to Transmitter LED, Receiver LED, Buzzer
- Overview of Security System
- Design of a prototype of Security Alarm System

Day-2:

Session – I

- Introduction to Audio systems and Speakers
- Overview of Audio Amplifiers and Oscillators
- Design of an Audio Amplifier
- Design of an Audio Oscillator circuit to drive a Speaker for a specific frequency

Session – II

- Introduction to Multiple Frequency
- Calculations to generate user defined frequency
- Design of a Five Switch Piano circuit to access multiple frequencies
- Introduction to Actuators and their principles

Session – III

- Introduction to Flemings Rule Experiment on working of DC motors
- Briefing on Driver circuits
- Design of a Driver circuit to control the directions of DC motor

Final Session – Test

Prototype of Automatic Control of DC motor over Obstacle Detection

Eligibility : Students from I/II/III/IV years of EEE, ECE, CSE, IT streams only

Venue : Your college campus

Schedule : Two day training includes six sessions plus a test session

Students will be divided in the teams of three each

Participation certificate will be issued to the students

Participation fee: Rs 750/- per participant.