COURSE TITLE   : PCB DESIGN & SPICE LAB
COURSE CODE   : 5047
COURSE CATEGORY   : A
PERIODS/WEEK   : 5
PERIODS/ SEMESTER   : 65/5
CREDITS   : 3

LIST OF EXPERIMENTS

After completing the course student will be able :

1. To prepare the PCB

    (a) Drawing the circuit diagram of analog and digital circuit functions
    (b) Layout and artwork procedure
    (c) Translating circuit schematic into layout
    (d) Taping art work for single sided board
    (e) Printing and etching
    (f) Drilling the board, surface preparation
    (g) Mounting/fixing procedure of components on PCB

2. To perform soldering and de-soldering

    Specification and selection of Soldering tools - soldering flux and solder - simple soldering with tag boards and prepare PCB - precaution in soldering with PCB's and IC's base - principle of wave soldering

3. To perform soldering and de-soldering of SMD
4. To perform PCB design and Layout preparation using available Simulation Soft ware
5. To use SPICE
    - Component model and sources
    - Units & values
    - types of analysis, operating point transient, AC & DC
    - Simulation of circuits (transient, AC & DC)

    (a) Characteristics of diode, BJT

    (b) Centre tapped Full wave Rectifier circuit

    (c) Single stage amplifier

    (d) RC phase shift oscillator

    (e) Astable multivibrator using transistor

    (f) Astable multivibrator using 555

    (g) Regulated power supply

    (h) Schmitt Trigger using 741

    (j) Sequential & combinational digital circuits