

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