

GUJARAT TECHNOLOGICAL UNIVERSITY

B.E Semester: 3

Electronics & Communication Engineering

Subject Code 131103

Subject Name: Electronics Workshop

Sr.No	Course content
1	Soldering techniques, stripping and tinning stranded wires, mounting components- plated through hole and surface mount technology, hand wire soldering, de-soldering techniques, electrostatic discharge.
2	Analog Troubleshooting: Electronics troubleshooting basics, troubleshooting with Oscilloscopes, signal injection and signal tracing, system analysis, diagnostics methods, servicing close loop circuits, troubleshooting noise and intermittent.
3	Digital Troubleshooting: Introduction to troubleshooting digital logic, Introduction to logic analyzers, working with Digital circuits and use of logic analysis system for troubleshooting Digital circuits.
4	PC Hardware basics: How computers work, system board, CD/DVD Drives and Hard Drives, Troubleshooting Fundamentals, Device Manager, Different Hardware and its Drivers, Multimedia Technologies, Power Supplies.
5	Study of Soldering Techniques and PCB Design : Students are expected to select any experiment. Soldering and testing is to be done for the selected experiment. Perform simulation of the same experiment by using CAD tools. Schematic as well as PCB design is to be carried out using CAD tools.
6	Design, Simulation and Implementation of Analog/Digital/MixMode Project : Students are expected to design any analog/digital/mix mode application of their choice. Perform simulation using software tools. PCB design, fabrication of PCB, testing and implementation should be done. Documentation of the project is to be done in standard IEEE format. Project report should include abstract in maximum 100 words, keywords, introduction, design, simulation, implementation, results, conclusion and references.

Reference Books:

1. Jean Andrews, Enhanced guide to managing and maintaining your PC, edition, 2001, Course Technology – Thomson learning publishers
2. Rashid M.H. “SPICE for circuits and electronics using pSpice”, Prentice Hall
3. Bosshart, “Printed Circuit Boards: Design and Technology”, Tata McGraw Hill
OrCAD/PCBII, “User’s Guide”.