

INFOSOFT IT SOLUTIONS

Training | Projects | Placements

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Hardware Design Development

Introduction

- Introduction to Hardware design & development process
- Introduction to analog and digital design world (brief about analog and digital components)
- Active elements
- Passive elements
- Voltage source
- Current source
- Amplifiers
- Opamps
- Logic Gates
- Flip flops
- Counters.

Power Supply Design

- Primary supplies
- Secondary supplies
- Static supplies (without Feedback)
- Dynamic supplies (with Feedback)
- Linear supplies
- Switching supplies

- Current controlled supplies
- Voltage controlled supplies
- Over voltage protection
- Under voltage protection
- Over current current
- Current control methods
- Surge protection circuits
- EMI/EMC protections
- Mini projectPower supply design.

Microcontroller & Peripheral's

- Different types of IC packages
- Identification of Controller
- Reset circuit
- Debugger circuit
- Push pull design of port pins
- Open drain design of port pins
- Memory Technologies (RAM, ROM, EPROM, EEPROM, FLASH) interfacing
- I/O Interface Technologies.

Communication Modules & User Interfaces

- Different types of communication modules and interfaces
- RS232, 485, 422 full duplex and half duplex, DMA, ADC, DAC, External Temperature
- External Watch RT dog
- ExternalC, TCP/IP, SPI, SSP, I2C, Wi-Fi, Bluetooth, USB, Zigbee, GPS, GPRS module, EDGE module.

Microcontroller Interfacings

- LEDs, Switches, Relays, DC Motor, Stepper Motor, ADC, DAC, Temperature Sensor, LCD, Touch Screen, Seven segment display... etc,
- Load calculations
- Power requirement calculation methods
- PCB mechanical fixing
- PCB dimension
- PCB external interface connectors
- Mini Project

PCB Design And Manufacturing

- Types of PCB / Base Material
- Overview of PCB Technologies
- CAD System Selection
- Design Rules & Design Factors
- Component Selection and Identification
- Design Laminates / Thermal Management
- Reliability Tooling Holes / Stiffeners (IPC Lessons), SMT, Wave and Reflow Soldering
- Layout Rules & Parameters / Library & Its Components,
- Cross Probing, Conductor routing / Mid Term Interaction