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NSIC
ISO 9001 : 2008

NTSC-HYD

PROSPECTUS
ON
TRAINING PROGRAMS

NSIC-TECHNICAL SERVICES CENTRE, HYDERABAD

(A Govt. of India Enterprise)

Kushaiguda Electronic Complex, Kamalanagar,
Hyderabad-500062
Phone – 91-40-27121422, 27124597, 27126646
Fax – 91-40-27122303

ABOUT NSIC

National Small Industries Corporation Ltd. (NSIC), is an ISO 9001-2008 certified Government of India Enterprise under Ministry of Micro, Small and Medium Enterprises (MSME). NSIC has been working to fulfill its mission of promoting, aiding and fostering the growth of small industries and industry related micro, small and medium enterprises in the country. Over a period of five decades of transition, growth and development, NSIC has proved its strength within the country and abroad by promoting modernization, upgradation of technology, quality consciousness, strengthening linkages with large medium enterprises and enhancing exports - projects and products from small enterprises.

NSIC operates through countrywide network of offices and Technical Centres in the Country. To manage operations in African countries, NSIC operates from its office in Johannesburg, South Africa. In addition, NSIC has set up Training cum Incubation Centre & with a large professional manpower, NSIC provides a package of services as per the needs of MSME sector.

NSIC carries forward its mission to assist small enterprises with a set of specially tailored schemes designed to put them in a competitive and advantageous position. The schemes comprise of facilitating marketing support, credit support, technology support and other support services.

ABOUT NSIC-TSC, HYDERABAD

NSIC-Technical Service Centre, Hyderabad was operationalized in 1991 with an aim to support the growth of small enterprises in the field of Electronics. The Centre offers Hi-Tech courses in Electronics, Computer Hardware & Software and CNC both during the day and in the evening for the benefit of people employed in this sector for their skill up-gradation. The Centre offers unique training programme for the physical handicapped (DEAF & DUMB) in Electronics & Desk Top Publishing. The Centre has very effectively contributed towards employment generation and skill up-gradation and is a nodal institute for training in computer hardware and software.

SALIENT FEATURES:- Highly qualified , experienced and Dedicated Faculty and well equipped Electronics Dept with Hardware & Networking Lab, Fibre Optics Lab, VLSI Lab as well as Mechanical Dept with CNC Lab & Machining Centre, CAD/CAM Lab – Pro-E, Unigraphics and AutoCAD. We have Computer Lab with latest software's for software Development & Training. Broad band Internet facility is available in all the labs for the use of students and faculty. A well stocked library with latest books and periodicals is available for students use. Eminent personalities are regularly invited for guest Lecturers and interaction with the students. Industrial Visits and training is provided to select students to give them practical exposure to the manufacturing and other related processes of the large industries.

FACULTY

MR. U. VENKATACHALAPATHI
B.E (Mech.), MBA
DGM & Centre Head

MR. N MADANA MOHAN BABU
M.Tech
Chief Manager (Tech.)

MR. M V SOMASEKHAR
M.Tech, M.Phil., PGDCA
Chief Manager (Tech.)

MR. B R SHANKARAGIRI
B.Tech
Dy. Manager (Electrical)

MRS. VANI HARPANAHALLI
MBA
Asst. Manager (Trg.)

MR. T MUTHU KUMARAN
M.Tech
Asst. Manager (Tech.)

MR. G JAYAVARMAN
DEE, MBA, MSW
D.O (Tech.)

MR. P SREENIVASA RAO
B.Tech
D.O (Tech)

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NTSC-HYD

NAME OF THE COURSE	**EMBEDDED SYSTEMS-MICROCONTROLLER AND RTOS**
DURATION	**45 DAYS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**B.TECH/MCA/M.SC**

TOPICS COVERED UNDER EMBEDDED SYSTEM COURSE:

THEORY:

- Introduction To Embedded Systems.
- Overview Of The 8051 Family.
- Architecture Of 8051.
- Memory Management.
- Assembly Language Programming.
- Jump/Loop And Call Instructions.
- Addressing Modes.
- Overview On C Language.
- Embedded C Language.
- I/O Port Programming.
- Timer/Counter Programming.
- Serial Communication.
- Interrupts Programming.
- Interfacing Of Microcontroller With External Memory And Devices.

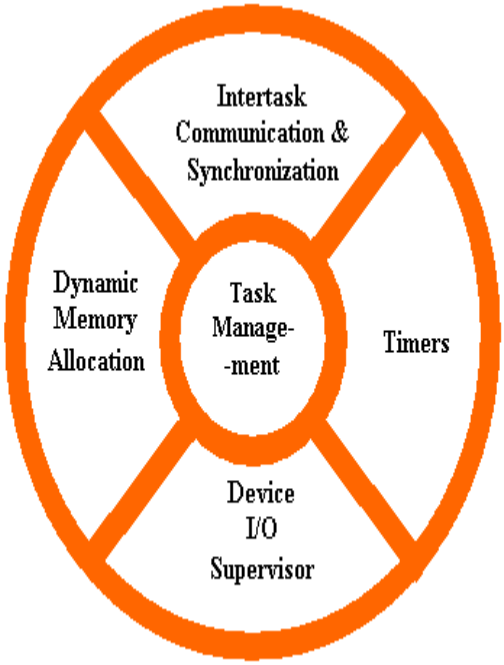
PRACTICALS:

- Practical On How To Solder Components On PCB.
- Interfacing Of Microcontroller With External Devices (Like LCD, ADC, Keypad, Sensors And Wireless Communication Modules).

TOPICS COVERED UNDER EMBEDDED SYSTEM COURSE:

THEORY:

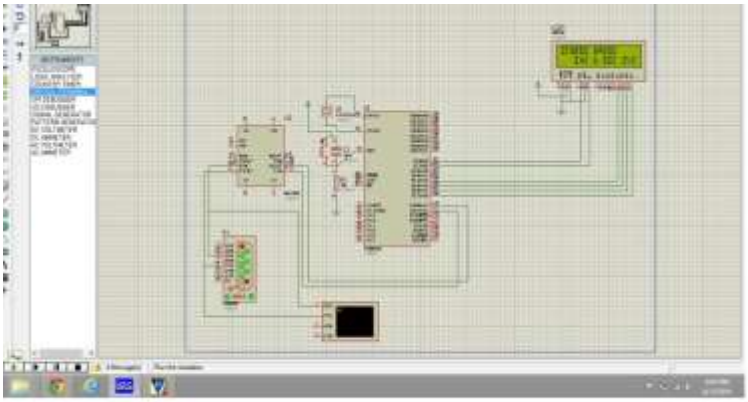
- Introduction to RTOS.
- Real-Time Operating Systems Architecture.
- Introducing to Tasks handling.
- Events and Inter task Communication.
- Task Conflicts.
- Introducing ISR.

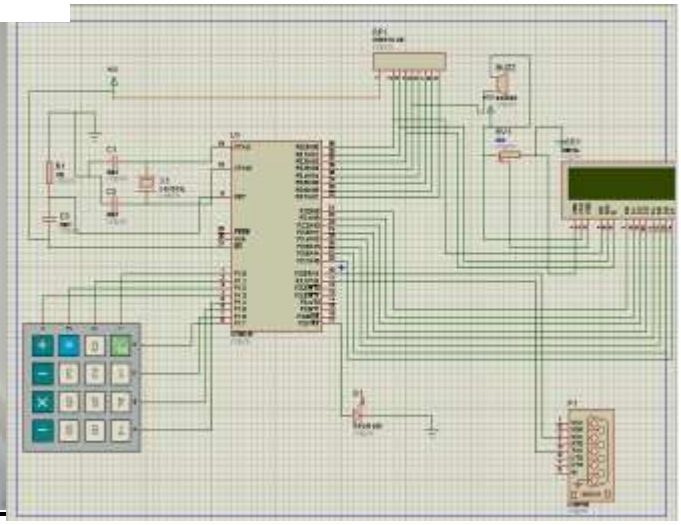


Basic Services Provided by a Real-Time Operating System Kernel

SOFTWARES:

- Keil compiler.
- Proteus simulator.
- Flash magic.





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NTSC-HYD

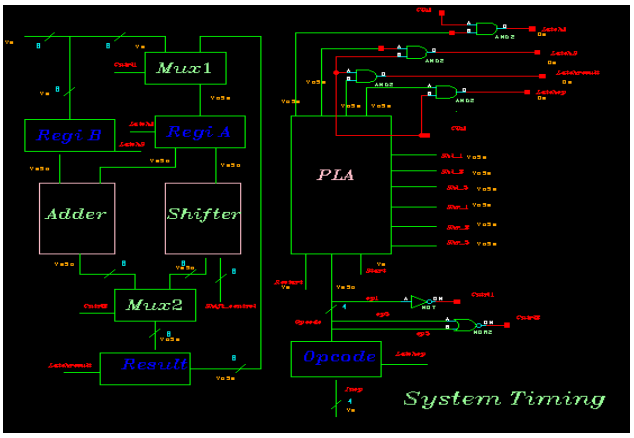
NAME OF THE COURSE	**EMBEDDED SYSTEMS-VLSI & DSP**
DURATION	**45 DAYS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**B.TECH/MCA/M.SC**

VLSI SYLLABUS:

- Fabrication, advantages and limitations of IC.
- vhdl language overview and concepts.
- entity and architecture description.
- MOS digital circuit design technologies.
- layout design and tools.
- data types and process statements libraries.
- standard packages.
- writing a code using vhdl and test benches.
- verilog language introduction.
- Module Ports types and declarations.
- Behavioral Modeling, Structural Coding technologies.
- FPGA and CPLD architectures and applications.
- Anti-fuse programming on fpga's, sequential and floor planning techniques Combination and sequential circuit designs.
- Compilation techniques'.

PRACTICALS:

- Design on fault modeling and test pattern generations.
- How to implement BIST for read only memories.
- Low power vlsi designing.
- Examples of design in verilog.

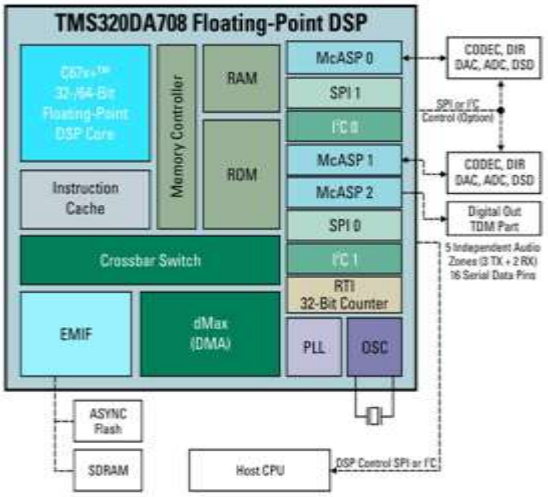


SOFTWARE'S:

- Xilinx 8.1i.
- Xilinx 12.4i.

DSP SYLLABUS:

- Introduction to digital signal processing.
- Discrete Fourier transforms.
- Impulse response of digital filters.
- Multi rate signal processing.
- File i/o, string handling, code efficiency and analysis.
- Mat lab debugger.
- Introduction to Numerical Methods – Linear algebra, numerical integration and differentiation.
- Solving systems of ODE's and interpolation of data Data Visualization and Statistics – Basic statistical tools in Matlab .
- Advanced data visualization tools (2D and 3D data visualization).
- Introduction to Graphical User Interfaces in Matlab –Designing GUI interfaces using Matlab's GUIDE interface.
- Simulink analysis.

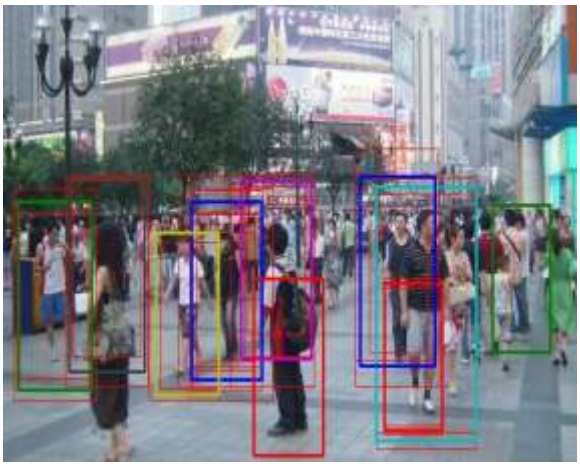


PRACTICALS:

- System programming.
- How to simulate programming.
- Chance constrained programming with filter design.
- Images segmentation without manually labeled training set.
- Tracking on real time systems.

SOFTWARE'S:

- Matlab R2014b.
- MatlabR2010a.



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NAME OF THE COURSE	**C' PROGRAMMING WITH DATA STRUCTURES**
DURATION	**45 DAYS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

- Introduction Language
- C-overview
- C program structure
- Basic Syntax
- C-Data types
- C Variables
- Constants
- Operator
- Decision making
- C-Loops
- C-Structures and Unions
- C-Structures
- C-Error handling
- C-Memory Management
- Introduction Stacks
- Linear Queues
- Circular Queues
- Linear Search, Binary Search, Bubble Sort,
- Linked List,
- Trees, B-Trees, Graphs.

PRACTICALS

Everyday 1 hour of practice on related class.

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NAME OF THE COURSE	**C & C++ WITH DATA STRUCTURES**
DURATION	**2 MONTHS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

- Introduction Language
- C-overview,
- C program structure,
- Basic Syntax, C-Data types,
- C Variables, Constants,
- Operator
- Decision making,
- C-Loops,
- C-Structures and Unions,
- C-Structures,
- C-Error handling,
- C-Memory Management.
- Introduction Stacks,
- Linear Queues, Circular Queues,
- Linear Search, Binary Search, Bubble Sort,
- Linked List,
- Trees, B-Trees, Graphs.
- C++ Basics,
- C++ Data types,
- variables, C++ Modifier Types,
- C++ Operators,
- C++ Loops Types,
- C++ Functions,
- C++ Arrays, strings,
- Pointers,
- C++ Date & Time,
- Class Objects, Object oriented,
- Inheritance, Overloading, Abstraction, Encapsulation, C++ Interfaces,
- Exception Handling, C++ Namespace,
- C++ Multi Threading,
- C++ Web Programming

PRACTICALS

Everyday 1 hour of practice on related class.

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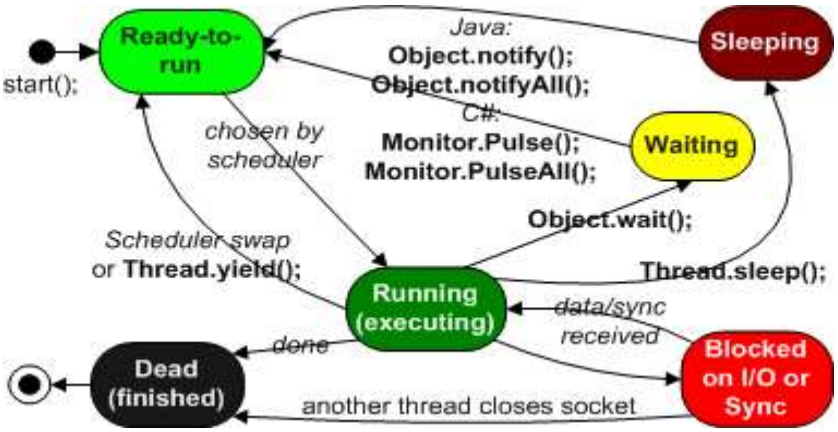
NAME OF THE COURSE	**JAVA(CORE)**
DURATION	**2 MONTHS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

- Introduction to core java
- Importance of java
- Java Fundamentals
- Arrays & Control Structures
- OOPS Concepts
- Implementation of OOPS Concepts
- Polymorphism
- Implementation of OOPS Concepts
- Packages & Interfaces
- Strings
- Lang Package
- Exception handling
- Multithreading
- Synchronization
- Collection Classes
- List
- Set & Map
- I/O Streams & Files
- I/O Serialization
- Networking Package
- Applet
- AWT
- Event Handling and Swing.



PRACTICALS:

Everyday 1 hour of practice on related class.

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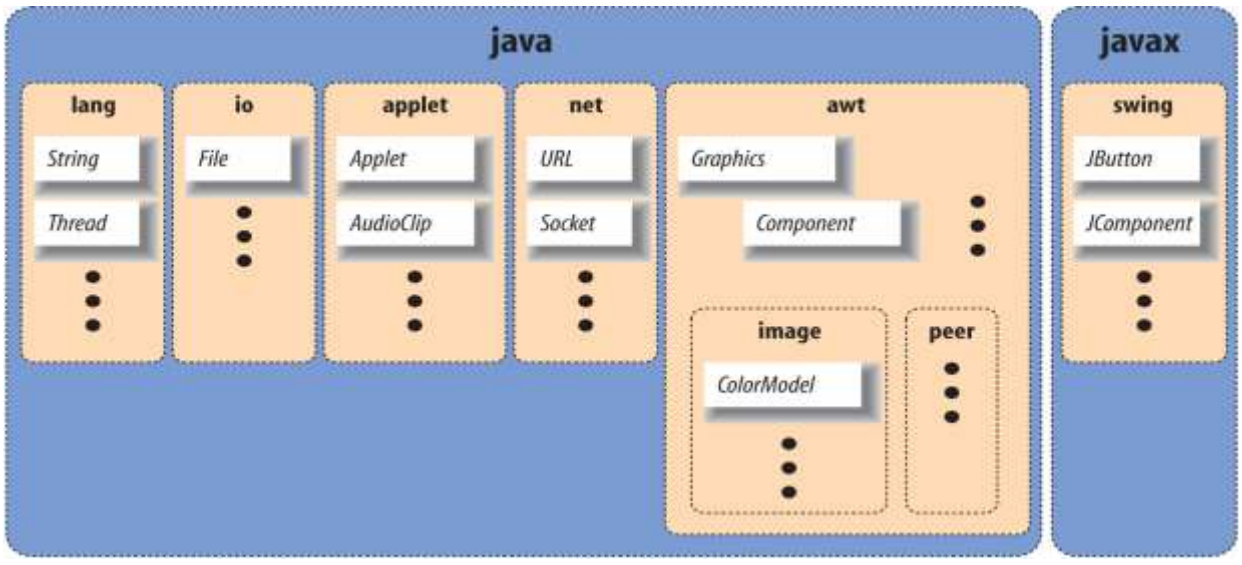
NAME OF THE COURSE	**JAVA (ADVANCED)**
DURATION	**2 MONTHS**
CAPACITY	**MIN 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY

- Introduction to advanced java Collections
- Networking
- Enterprise Java Bean
- Java Database
- Connectivity (JDBC)
- Servlets
- Java Server Pages (JSP)
- Remote Method Invocation Multithreading
-
- Common Object Request Broker Architecture (CORBA)
- Introduction Smart Phone Application Development
- Strings and Charecters

PRACTICALS

Everyday 1 hour of practice on related class.



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NAME OF THE COURSE	**.NET**
DURATION	**2 MONTHS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

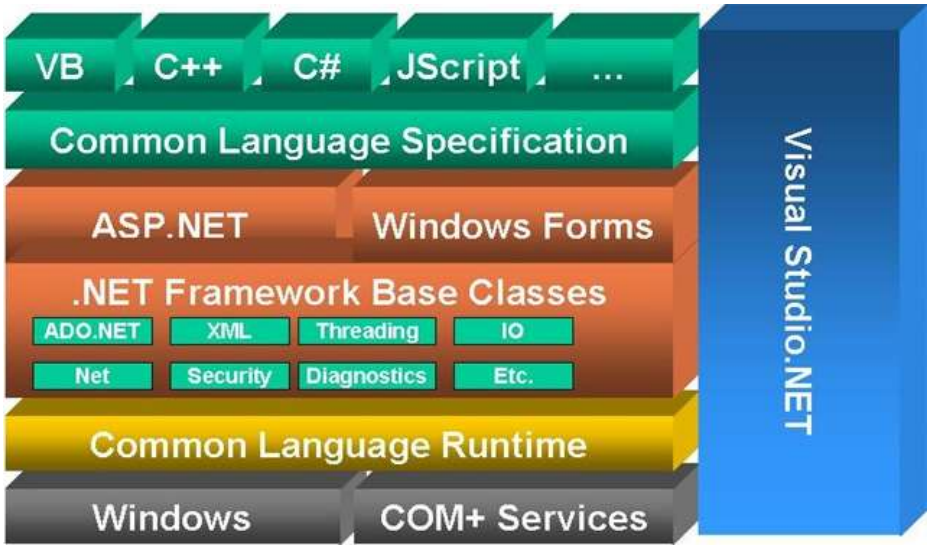
C#.NET

- Introduction to Framework and C#.Net Language
- Datatypes,Variables
- Operators
- Loops
- Arreys,Strings,Collections
- Object Oriented Programming, ClasObject
- Inheritence,Encapsulation,Abstraction,Polymorpysum
- Windows Forms
- Ado.Net and N-Tier Application
- LINQ
- Remoting
- Setup and deployment

ASP.NET

- Asp.Net Introduction
- Types of applications execution process
- creations Virtul directory
- Validation controls, Navigation
- Data controls
- Master pages
- Add rotetors

- File uploading
- SMTP mail
- Web services
- state management
- authentication and authouraization
- Ado.Net Entity data model
- Membership concept



SQL Server

- Introduction to SQL
- Data Types
- Operators
- SQL commands
- sequence, Unique
- Contraints
- Sub Queries and nested sub queries
- Trigger
- Function and cursors
- Stored Procedures

PRACTICALS

- Everyday 1 hour of practice on related class.

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NAME OF THE COURSE	**ORACLE SQL & PL SQL**
DURATION	**45 DAYS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

- Introduction Data information
- Database and DBMS
- Relations
- Tuples
- Attributes
- Oracle engine
- Architecture.

SQL SERVER:

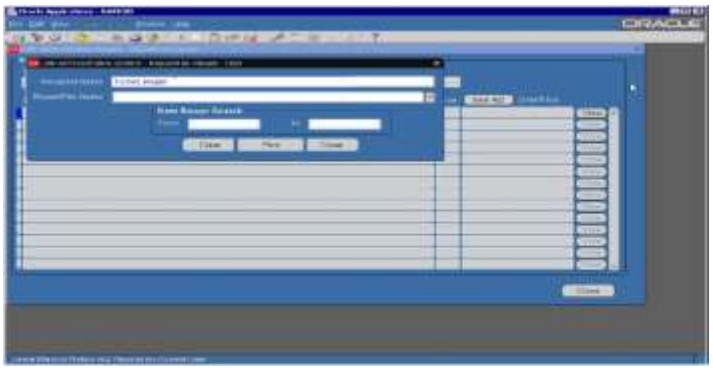
SQL, SQL statement (DCL, DDL, DML) Data-type, Create table, Insert Data into tables, view data from table, view table structure,Computation on table data using arithmetic operation and logical operation.

PL/SQL:

Function, group by, order by clause, constraints. Joins of two or more table, Views, sequencing, Security Management u Database triggers sing SQL, PL/SQL (programming in SQL), PL/SQL objects, procedures and functions, Oracle packages, Database triggers.

PRACTICALS:

Everyday 1 hour of practice on related class.



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NAME OF THE COURSE	**ROBOTICS**
DURATION	**45 DAYS**
CAPACITY	**MIN. 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY:

- Introduction to Robotic Systems
- Introduction to Microcontrollers
- Instruction set of 8051
- Microcontroller Pin description
- Microcontroller architecture
- Basic & Port programming of 8051
- Timer Programming of 8051
- Interrupt Programming of 8051
- Serial Communication Programming for 8051
- LCD & Seven Segment Display
- C Programming
- Embedded C
- Keil Compiler
- Introduction to Applications of Robotics
- Hardware/Software Design
- Effectors, Actuators and Motors
- Sensing and sensors
- Sensors and other peripherals
- Mobile Platforms
- Path Planning
- Direct Kinematics
- Inverse Kinematics
- Group Robotics

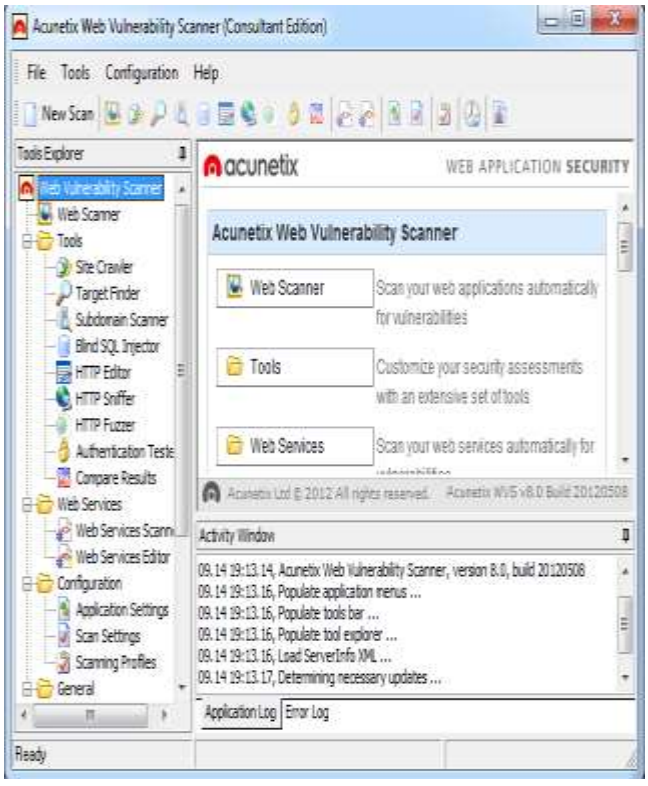
PRACTICALS:

- Interfacing of microcontroller with motor drivers, relays, servo motors, lcd and sensors.

NAME OF THE COURSE	**SOFTWARE TESTING TOOLS**
DURATION	**2 MONTHS**
CAPACITY	**MIN 10 MEMBERS**
QUALIFICATION	**INTER/DEGREE**

THEORY

- Introduction to Testing
- Testing Techniques
- Defect Analysis
- Introduction Application Life Cycle Management (ALM)
- Using Quick Test Professional (QTP/UFT)
- Using Virtual User Generator (VGEN)
- Fundamentals of Load Runner.



PRACTICALS

Everyday 1 hour of practice on related class.

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NAME OF THE COURSE	**MAIN PROJECT/INTERNSHIP-ECE/CSE/IT/EEE/EIE/ECM (EMBEDDED, VLSI, DSP, JAVA, .NET ETC.,)**
DURATION	**2 MONTHS**
QUALIFICATION	**B.TCH/MCA/M.ASC**

Basic Theory Class - 15 Days

Practicals – 10 days

Theory on Perticular Project – 10 Days

Practicals on Project – 15 Days

Project Report (Document/PPT) – 10 Days

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NAME OF THE COURSE	**MINI PROJECT ECE/CSE/IT/EEE/EIE/ECM**
DURATION	**1 MONTH**
QUALIFICATION	**B.TCH/MCA/M.ASC**

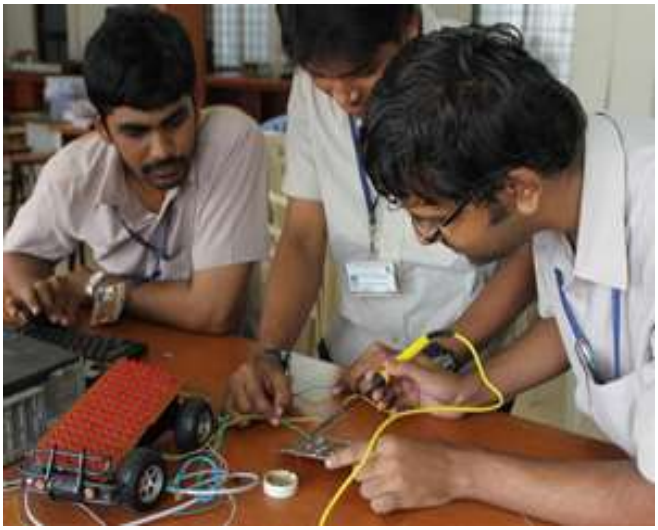
Basic Theory Class -7 Days

Practicals – 3 days

Theory on Perticular Project – 7 Days

Practicals on Project – 10 Days

Project Report (Document/PPT) – 3 Days



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Diploma Industrial Training

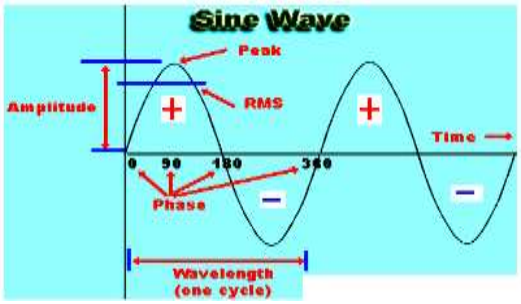
The main aim of this program is to impart industrial exposure to student perusing diploma in electronic communication; we give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, R&D, quality control and technical marketing.

Name of the course : Diploma Industrial Traini

Duration of the course : 6Months (3 Hours/Day)

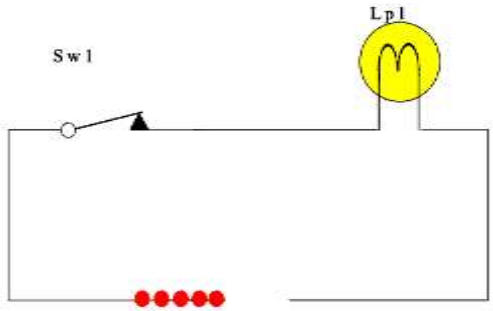
In taking Capacity : 50 Students/Batch

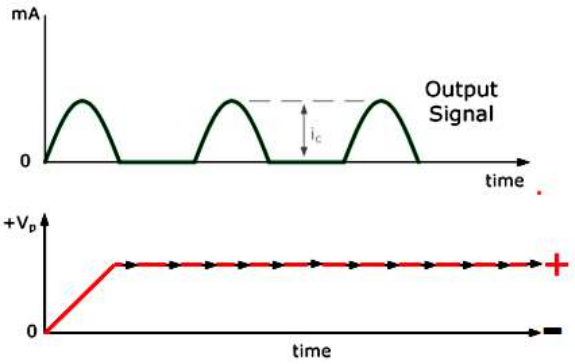
Minimum Qualification : Diploma

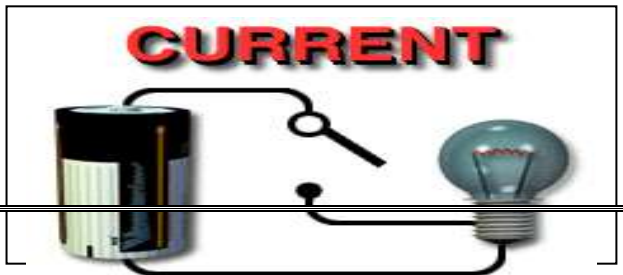


Brief about curriculum covering following points

- **Introduction Of Atomic Stricture**
- **Organization Structures**
- **Basic Electrical**
- **Measuring Instruments (Analog & Digital)**
- **Basic Electronic Introduction:**
- **Introduction Of Passive Components**
- **Switches**
- **Active Components**
- **Semiconductor Diodes**
- **Circuit Ideas Power Supply (Converters) With Prac**
- **Un Regulated Power Supply.**
- **Regulated Power Supply**
- **Transistors**
- **PNP Transistors & NPN Transistors**
- **Industrial/Power Electronics**
- **Integrated Circuits (Ic's)**
- **Circuit Ideas / Projects/R & D Techniq**
- **Communication Circuits**
- **Timer Circuit**
- **Power Electronic Projects**
- **Ac To Dc Interfacing Circuits**
- **Sensing Circuits**
- **Interconnection Techniques**
- **SMT Technique**
- **PCB Designing By Using Software**







- **Fiber Optic Techniques**
- **Employment Opportunities:** On successful completion of this course, the candidates shall be gain fully employed in the following industries:

1. Various Electronics Equipment Manufacturing Industries.
2. Automobile electronics and allied industries, manufacturing solar power based inverters.
4. Industries manufacturing
5. Service industries like BSNL, MTNL, Home appliances manufacturing company, Railways, ISRO, Naval dockyard, RCF, BPCL etc.
6. Various Mobile industries like LG, Samsung, Nokia, Sony etc.
8. Self-employment

During Theory class Session of Industrial Training

During Practical Session of Industrial Training

Mini Project

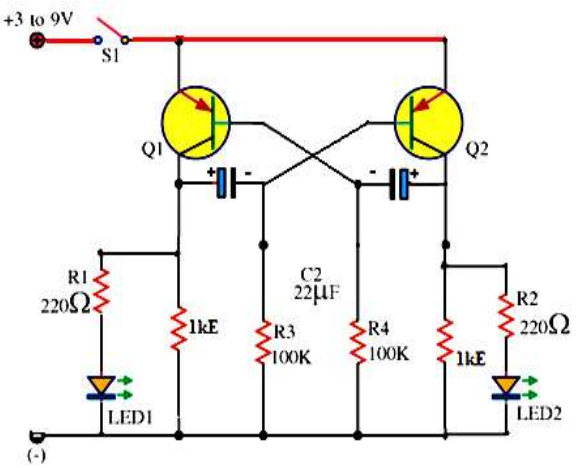
The main aim of this program is to give practical exposure to Engineering Students (B.E, B.Tech) in Electronic Communication students; we give this training as per the requirement of engineering collages. In this training program our trainees themselves design and assemble live project as per their academic requirement. This program ensures the project ideas and practical confidence to our trainees.

Name of the course : Mini Project

Duration of the course : 1 Months (3 Hours/Day)

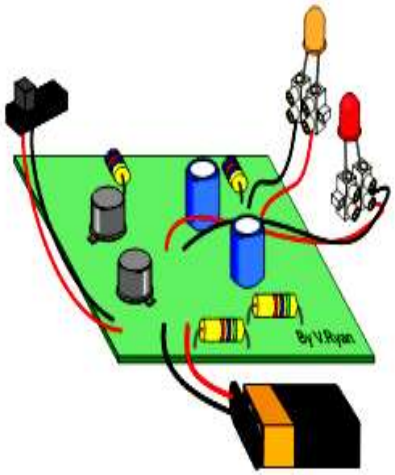
In taking Capacity : 30 Students/Batch

Minimum Qualification : B.E, B.Tech



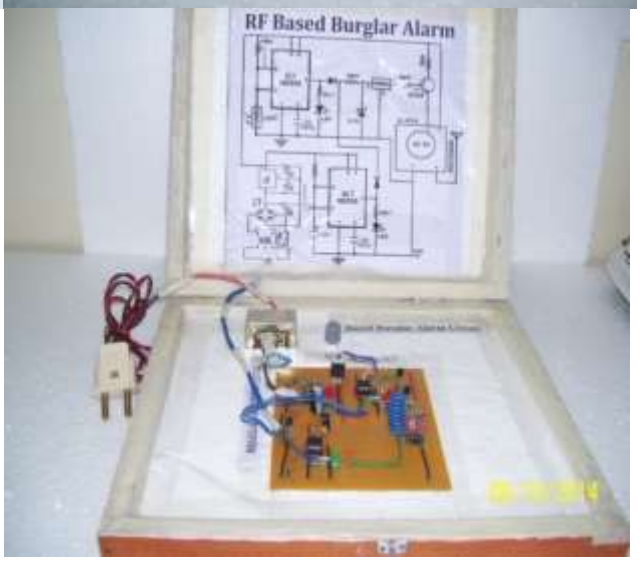
Brief about covering the following Projects:

- **Solar Direction Tracker**
- **Electronic code lock system**
- **Water level indicator**
- **Kitchen execution fan controller**
- **RF Based digital data transitions**
- **Solar based garden light**
- **Optical communication based counter**
- **RF Based ac motor controller**
- **4 Wheeler Parking Status Indicators at Parking Area**
- **Automatic Single Phase Sump Motor Controller**
- **Automatic Phase Changer**
- **IR Based Four Wheeler Parking Guard**
- **High Quality Intercom**
- **RF Based Anti Theft Alarm for Bikes**
- **DC Motor Direction Control with IR Communication**
- **Washing Machine Motor Controller**
- **Touch controlled RF Based music Transmission & Reception**
- **IR Remote Controlled Multi Motor Controller**
- **Advanced Power Saving Hearing aid**
- **Automatic Power saving emergency light**
- **Fridge Door alarm**



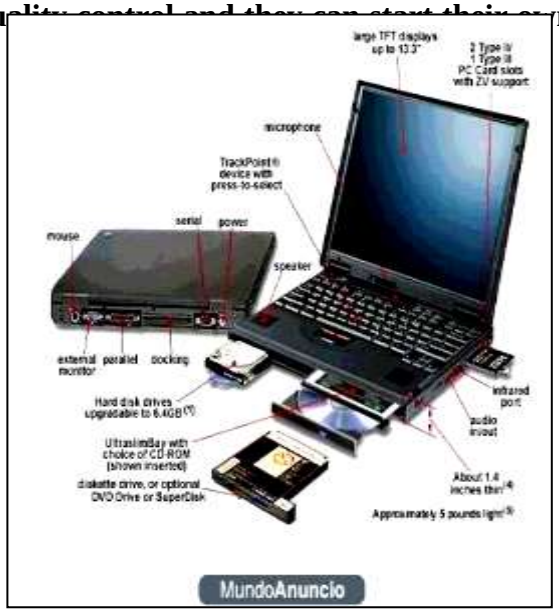
During Practical Session of Mini Project

After completion of their project model kits



PC Hardware

The main aim of this programis to give hands on vocational training to unskilled people like school and collage dropped out students. This training program gives self-confidence and self-motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, quality control and they can start their own sales & service center.



Name of the course : PC Hardware

Duration of the course : 2Months (3 Hours/Day)

In taking Capacity : 30 Students/Batch

Minimum Qualification : SSC

Brief about curriculum covering following points

- **Introduction To Computers**
- **Identification Of Peripherals**
- **Assembling And Disassembling Of Computer**
- **Bios**
- **Partition**
- **Formatting**
- **Installing Operating System Windows Xp**
- **Installing Operating System Windows 7**
- **Installing Duel Operating System**
- **Installing Drivers**
- **Installing Software**
- **Uninstalling Software**
- **MS Dos**
- **User Accounts**
- **Hiding Folders And Disk Drives**
- **Antivirus**
- **Sharing Computer And Printers**
- **Internet Configuration**
- **Trouble Shooting**
- **Crimping Cat-5 Cable Through Rj-45 Connect**
- **SMPS**
- **Printers**
- **Monitors**
- **Basic Networking**

Job Role:

The role of Computer Hardware & Network Maintenance personnel is to support and maintain computer systems, desktops, and peripherals. This includes installing, diagnosing, repairing, maintaining, and upgrading all hardware and equipment while ensuring optimal workstation performance. The person will also troubleshoot problem areas in a timely and accurate fashion, and provide end user training and assistance where required. Install, maintain and setup LAN with Internet Connection.

<u>During Theory class Session of Electronics & PC Hardware</u>

During Practical Session of Electronics & PC Hardware

Electronics Testing & Assembly Operator

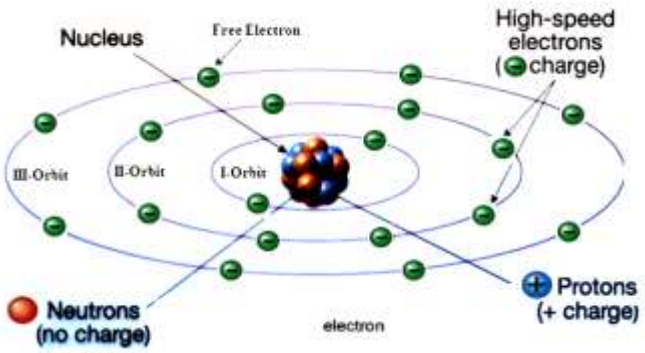
The main aim of this program to impart skills to unskilled people like school and collage dropped out students. This training program gives self confidence and self motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, R&D, quality control and technical marketing.

Name of the course : Electronics Testing & Assembly Operator

Duration of the course : 3Months (3 Hours/Day)

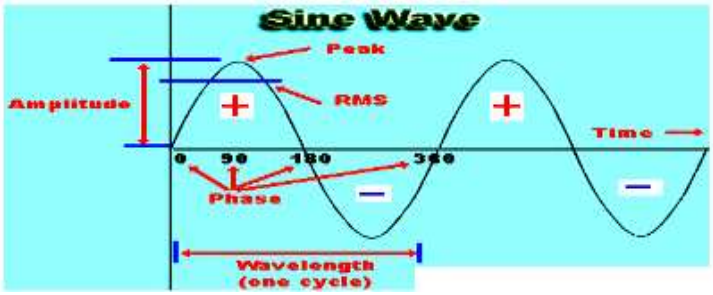
In taking Capacity : 30 Students/Bat

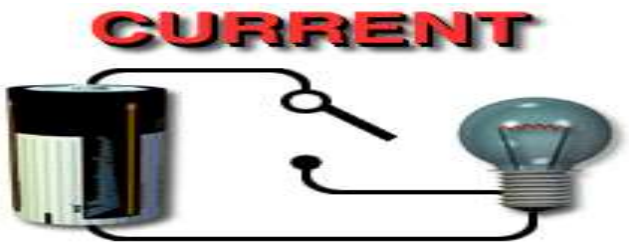
Minimum Qualification : SSC



Brief about curriculum covering following poi

- **Hand Tools**
- **Atomic structure**
- **Conductors**
- **Insulators**
- **Semi-Conductors**
- **Current,**
- **Voltage**
- **Power**
- **Measuring Instrument's**
- **Introduction of Passive Components**
- **Resistors**
- **Inductor**
- **Capacitor**
- **Transformer**
- **Switches**
- **Diodes**
- **Transistors**
- **Integrated Circuits**
- **Soldering techniques & SMD Techniques**
- **Circuit of Assembling**





Deliverables: After successful completion of this course the trainee shall be able to perform the following skills with proper sequence.

1. Identify various active and passive components and their applications.
2. Handle different types of Electronic measuring Instruments
3. Identify different types of faults in electronics equipment's.
4. Soldering techniques

5. Repair and maintenance of SMPS, UPS, Inverter, solar power system and various analog and digital circuits.

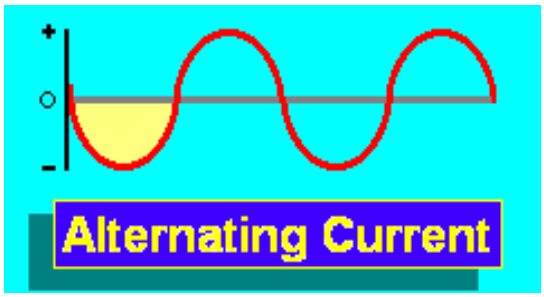
6. Repair and maintenance of electronics communication equipment's.

<u>During Theory class Session of Electronics Testing & Assembly Operator</u>

<u>During Practical Session of Electronics Testing & Assembly Operator</u>

Electronics & PC Hardware

The main aim of this program is to give hands on vocational training to unskilled people like school and collage dropped out students. This training program gives self-confidence and self-motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, quality control and they can start their own sales & service center.



Name of the course : Electronics & PC Hardv

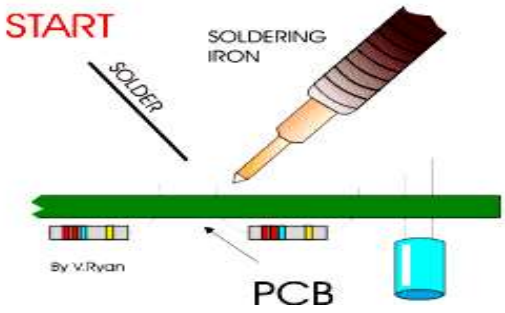
Duration of the course : 4Months (3 Hours/Day)

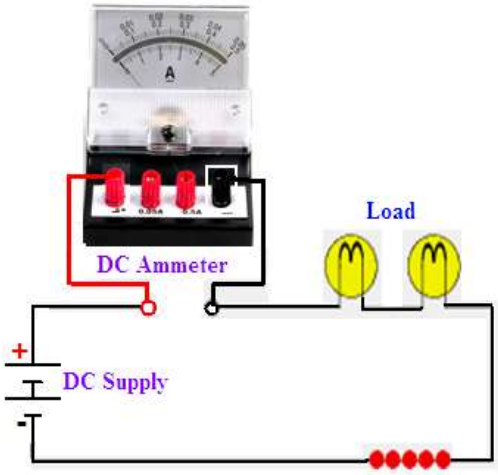
In taking Capacity : 30 Students/Batch

Minimum Qualification : SSC

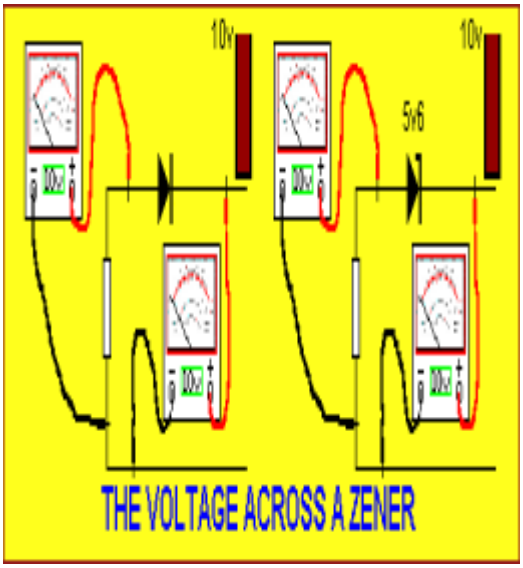
Brief about curriculum covering following points

- **Introduction To Computers**
- **Identification Of Peripherals**
- **Basic Electronics**
- **Basic Electrical**
- **Measuring Instruments**
- **Identification of Components**
- **Testing of Components**
- **Types of ICs**
- **Assembling And Disassembling Of Computer**
- **Bios**
- **Partition**
- **Formatting**
- **Installing Operating System Windows Xp**
- **Installing Operating System Windows 7**
- **Installing Duel Operating System**
- **Installing Drivers**
- **Installing Software**
- **Uninstalling Software**
- **MS Dos**
- **User Accounts**
- **Hiding Folders And Disk Drives**
- **Antivirus**
- **Sharing Computer And Printers**
- **Internet Configuration**
- **Trouble Shooting**





- **Crimping Cat-5 Cable Through Rj-45 Connector**
- **SMPS**
- **Printers**
- **Monitors**
- **Basic Networking**
- **Job Role:**
- **The role of a Computer Hardware & Network Maintenance personnel is to support and maintain computer systems, desktops, and peripherals. This includes installing, diagnosing, repairing, maintaining, and upgrading all hardware and equipment while ensuring optimal workstation performance. The person will also troubleshoot problem areas in a timely and accurate fashion, and provide end user training and assistance where required. Install, maintain and setup LAN with Internet Connection.**

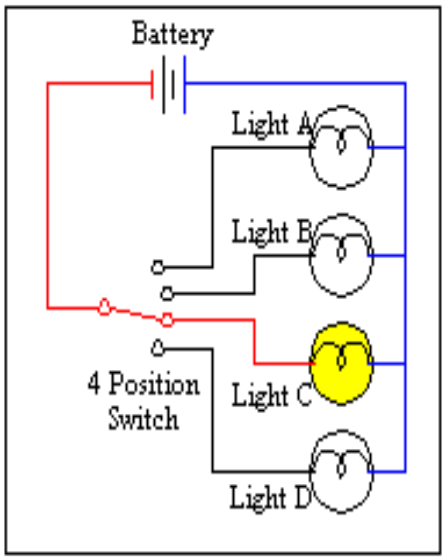


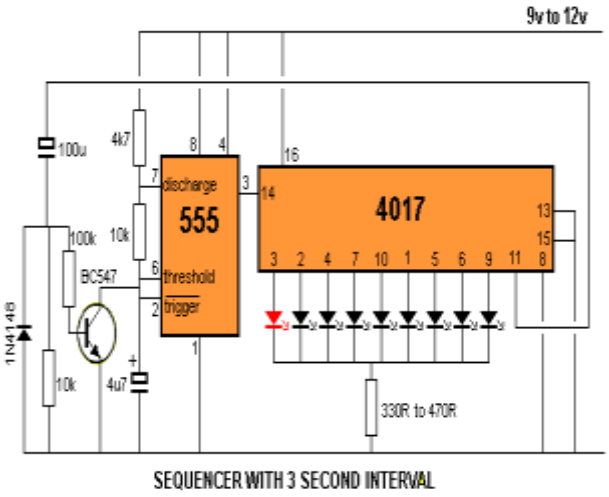
MICRO PROJECT

The main aim of this program is to give practical exposure to Engineering Students (B.E, B.Tech) in Electronic Communication students, we give this training as per the requirement of engineering collages. In this training program our trainees themselves design and assemble live project as per their academic requirement. This program ensures the project ideas and practical confidence to our trainees.

Name of the course : Mini Project
Duration of the course : 15days (3 Hours/Day)
In taking Capacity : 30 Students/Batch
Fees : Rs 1000/- +14% Tax
Minimum Qualification : B.E, B.Tech
Brief about covering the following Projects:

1. SWITCHES
2. POWER SUPPLY
3. DIGITAL CIRCUIT
4. COMMUNICATION CIRCUITS
A. Line Communication
B. Optical Communication
C. RF Communication
5. INTERFACING CIRCUITS (DC to AC)
A. Electromagnetic Interfacing
B. Optical Interfacing,
C. Sensor circuits





SEQUENCER WITH 3 SECOND INTERVAL

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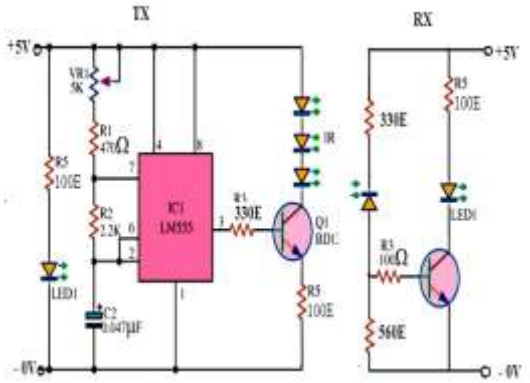
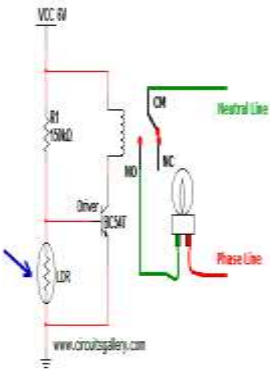
INTERNSHIP/INDUSTRIAL TRAINING

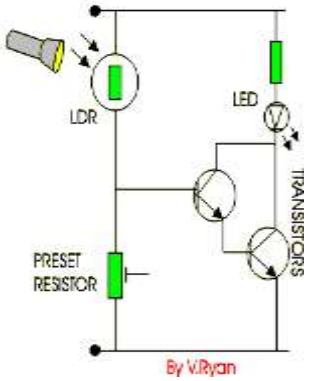
The main aim of this program is to give practical exposure to Engineering Students (B.E, B Tech) in Electronic Communication students; we give this training as per the requirement of Engineering collages. In this training program our trainees themselves design and assemble live project as per their academic requirement. This program ensures the project ideas and practical confidence to our trainees.

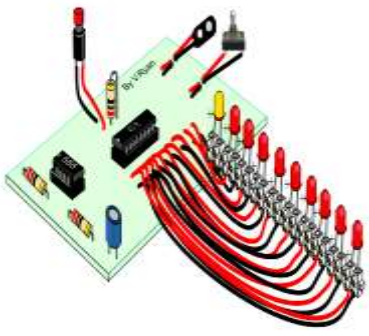
Name of the cours : Internship/Industrial Training
Duration of the course : 2 Months (3 Hours/Day)
In taking Capacity : Rs 3000/- +12.36 % Tax
Minimum Qualification : B.E, B.Tech
Brief about covering the following Projects:

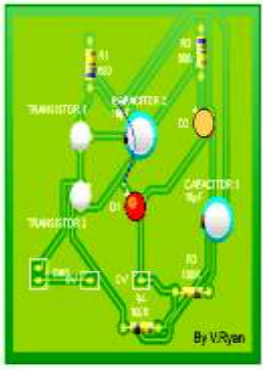


- **1. SWITCHES**
- **2. Electronic components, Identification, Status, Termi**
- **3. POWER SUPPLY**
- **A. Regulated Power Supply**
- **B. +V, -V With Respect To Common Ground**
- **4. TRANSISTORS SWITCHING WITH**
- **A. Audio circuits**
- **5. ANALOGUE BASED CIRCUIT**
- **6. SENSORS BASED CIRCUIT**
- **A. Light sensing based circuit**
- **B. Semi conductor light sensing based cir**
- **C. Temperature sensing circuit**
- **D. vibration sensing circuit**
- **E. Smoke sensing based circuit**
- **7. DIGITAL CIRCUIT**
- **8. COMMUNICATION CIRCUITS**
- **A. Line Communication**
- **B. Optical Communication**
- **C. RF Communication**
- **9. INTERFACING CIRCUITS (DC to**
- **A. Electromagnetic Interfacing**
- **B. Optical Interfacing**
- **10.PCB DESIGNING USING PADS SC**
- **11. INTRODUCTION OF DSP**









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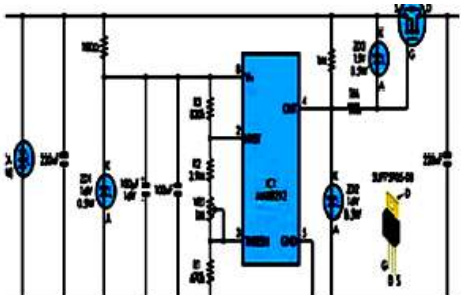
PCB DESIGNING

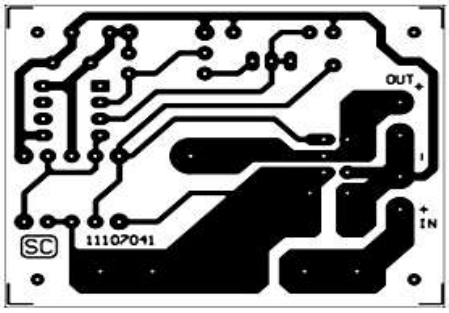
The main aim of this program is to give practical exposure to ITI, Diploma, Engineering Students (B.E, B Tech) in Electronic and Communication department; we give this training as an additional skill to enhance the employment. In this training program our trainees themselves design a PCB through software as per the requirement of industry..



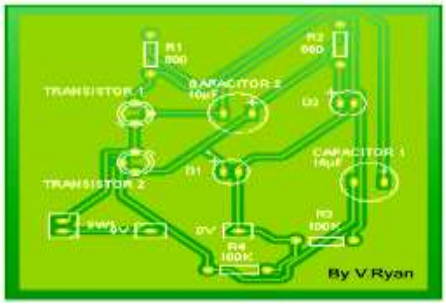
Name of the course : PCB designing

Duration of the course : 2 weeks (3 Hours/Day)
In taking Capacity : Rs 500/- +12.36 % Tax
Minimum Qualification : IT/Diploma, B.E, B Tech

PCB Designing can be divided in two parts:

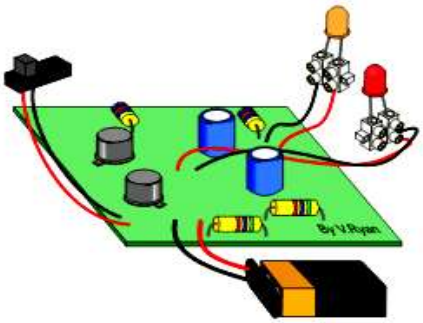


- **Step 1 - Start a New Design**
- **Step 2 - Select the Sheet Size**
- **Step 3 - Add Parts and Connector Symbols**
- **Adding a Connector Symbol**
- **To add a connector symbol:**
- **New Library and Part Creation**
- **Step 4 - Add Buses**
- **Step 5 - Add Connections to Parts, Connectors, and B**
- **Step 6 - Add Power and Ground Symbols**
- **Step 7 - Print the Schematic**
- **Step 8 - Generate Reports**
- **Step 9- Create a Layout Netlist**



Developing a pcb board pictorial lay-out through software:

- **Step 1 - Create a Board Outline**
- **Step 2 - Import a Net list and Disperse Parts**
- **Step 3 - Setup Design Rules**
- **Step 4 – Disperse components**
- **Step 5- Route Traces**
- **Step 6 - Check for Rule Violations or verify design.**
- **Step 7-Save the design**
- **Step 8 - Generate Reports**
- **Step 9 - Output the Design (Gerber files)**
- **Minimum Files to be given to Manufacturer for fabr**



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DOMESTIC ELECTRICAL APPLIANCES

The main aim of this program to impart skills to unskilled people like school and collage dropped out students. This training program gives self-confidence and self-motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, as PCB Designer and in productions, service & maintenance, R&D, quality control and technical marketing.

Name of the course : DOMESTIC ELECTRICAL APPLIANCES
Duration of the course : 2 Months (3 Hours/Day)
Fees : Rs.3000/- +12.36 % Tax
In taking Capacity : 30 Students/Batch
Minimum Qualification : SSC

Brief about curriculum covering following points

- **Hand Tools**
- **Conductors**
- **Insulators**
- **Semi-Conductors**
- **Current, Voltage, Powe**
- **Measuring Instrument's**
- **Introduction of Passive Components**
- **Soldering techniques & SMD Techniques**
- **Circuit of Assembling**
- **Circuit Testing**
- **Geezer**
- **Ceiling and Table fan**
- **Air cooler**
- **Wet grinder**
- **Bread toaster**
- **Oven**
- **Hair drier**
- **Mixer**
- **Rice cooker**
- **Winding machine**
- **Iron box**
- **Immersion heater**
- **Stabilizer**









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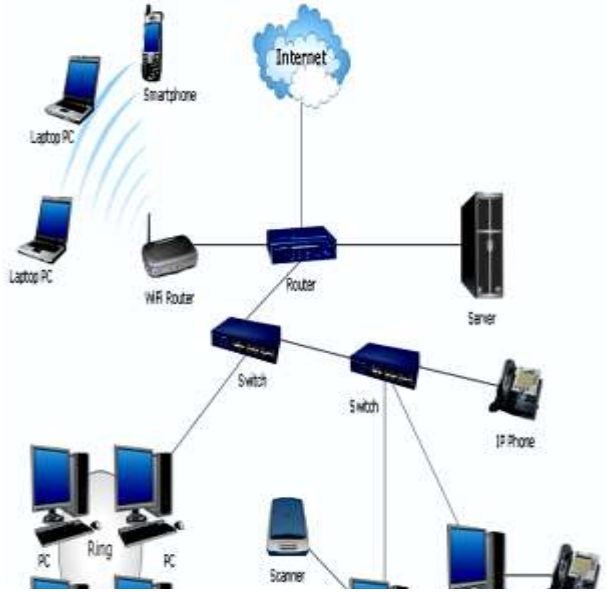
COMPUTER NETWORKING

The main aim of this programs to give hands on vocational training to unskilled people like school and collage dropped out students. This training program gives self-confidence and self-motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, quality control and they can start their own sales & service center.

Name of the course : Computer Networking
Duration of the course : 1 Month (3 Hours/Day)
Fees : Rs 2000/- +12.36 % Tax
In taking Capacity : 30 Students/Batch
Minimum Qualification : SSC



Brief about curriculum covering following points

- **Networking definition**
- **Basic electronics of system hardware comp**
- **Types of computer networks**
- **Network topologies**
- **Why computer network is necessary and n**
  Transformation
- **Cables and connectors, crimping and colou**
- **Network operating system**
- **LAN transmission methods**
- **IP address and TCP/IP**
- **Network Protocol**
- **Internet connection sharing**
- **Trouble shooting and fixing equipm**

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MAINTENANCE & REPAIR OF ELECTRONIC OFFICE AUTOMATION

The main aim of this programs to give hands on vocational training to unskilled people like school and collage dropped out students. This training program gives self-confidence and self-motivation to our trainees. We give this training as per the requirement of industries. After this training program our trainees can work directly in any electronic industries in the area of technical stores, productions, service & maintenance, quality control and they can start their own sales & service center.

Name of the course : ELECTRONIC OFFICE A
Duration of the course : 2 Months (3 Hours/Day)
Fees : Rs 3000/- +12.36 % Tax
In taking Capacity : 30 Students/Batch
Minimum Qualification : SSC

Brief about curriculum covering following points

- **Introduction To Computers**
- **Identification Of Peripherals**
- **Assembling And Disassembling Of Compu**
- **Bios**
- **Partition**
- **Formatting**
- **Installing Windows Xp,7 and dual operati**
- **Installing and uninstalling Drivers , softw**
- **MS Dos**
- **User Accounts**
- **Hiding Folders And Disk Drives**
- **Antivirus**
- **Sharing Computer And Printers, scanner,**
- **Internet Configuration**
- **Trouble Shooting**
- **Crimping Cat-5 Cable Through Rj-45**
- **SMPS,UPS, Printers, Monitors and ha**
- **Networking software**
- **Cordless and pushbutton telephone**
- **Wireless router**
- **24 port switch**


01/10/2006


08/05/2013


01/10/2006


10/04/2012

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CNC/CAD/CAM DEPT. (COURSE-1)

NAME OF THE COURSE : CNC PROGRAMMING & OPERATIONS-MILLING

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED: ITI / S.S.C PLUS 2 YRS. INDUSTRIAL EXP.

TOPICS COVERED :

- Introduction of CNC Milling Machine, about Controller, Coordinate System of the Machine, about Cutting Tools, Operations, Main Parts of the Machine
- Methods of Progrmming (Absolute And Relative), Toolpaths with Dimensional Coordinates
- Main Functions and Adresses, G-Codes, M-Codes, Operating Modes

CNC PROGRAMMING & OPERATION -MILLING

- Programming Structure, Centre line Programming with commands
- About Referance Return, Zero Offset, Geometrico Offset, Tool Length Compansatations
- Programming on Solids Cutting like Face Milling, Pocket Milling, Grooving Etc
- Subprogrammes
- About Cutter Radius Compansatation and its Codes Of G40, G41, G42 and using Models of profile Operation, Circular Pockets Etc
- Canned Cycles-Drilling, Boring, Tapping
- Polar Coordinate and Mirror Programming

PRACTICALS ON THE MACHIN

- Introduction about Control Panel, Machine Axis, Homing/Referance, Programming Entering Practise
- Taking Edge and Centre Offset on Machine
- Plain, Profile Milling Operation on Machine
- Drilling Cycles with G81,G82,G83,G73 Codes and Tapping Cycles, Fixing and **c**hanging of tools with automatic tool changer
- Programmes execution with Cutterradius Compansatation like Profile, Pockets Operations Etc
- Face Milling, Pocket Milling, Profiles Operations with Subprogrammes
- Boring Operations with G85,G86,G76,G87 Codes
- Mirror Operation and Left Out Codes, Commands
- Editing Commands Like Copy, Move, Merge, Change, Back Ground Editing, Graphics Etc

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CNC/CAD/CAM DEPT. (COURSE-2)

NAME OF THE COURSE : CNC PROGRAMMING & OPERATIONS -TURNING

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED : ITI / S.S.C PLUS 2 YRS. INDUSTRIAL EXP.

TOPICS COVERED :

- Introduction of CNC lathe Machine, about Controller, Coordinate System of Machine, about Cutting Tools, Operations, Main Parts of the Machine
- Method of Progrmming (Absolute And Relative), Toolpaths with Dimensional Coordinates
- Main Functions and Adresses, G-Codes, M-Codes, Operating Modes
- Programming Structure, Sub Programmes
- About Referance Return, Zero Offsets, Geometric Offsets, Wear Offsets

CNC PROGRAMMING & OPERATIONS –TURNING

- Programming on Facing Cycles, Threading Cycles with (G90,G94,G92)
- Taper Turning (G90,G94), Internal Turning Operations
- About Tool Nose Radius Compansatation and its Codes Of G40, G41, G42 and using models of profile operation
- Multiple Repeatative Cycles (G70,G71,G72,G73,G74,G75,G76)
- Direct Drawing Dimensions Programming, Calculational Part of Complex Drawings

PRACTICALS ON THE MACHINE

- Introduction about Control Panel, Machine Axis, Homing/Referance, Programme Entering Practice
- Taking Offset on Machine
- Facing and Step Turning, Grooving, Threading operations on Machine
- Profile Operations, Changing of Tools with Automatic tool changer
- Programmes Execution with T N R C, Operations with Subprogrammes
- Internal Operations Like Boring, Grooving, Threadig, Profiles
- Multiplerepeatative Cycles (G70,G71,G72,G73,G74,G75,G76)
- Editing Commands Like Copy, Move, Merge, Change, Back Ground Editing, Graphics Etc

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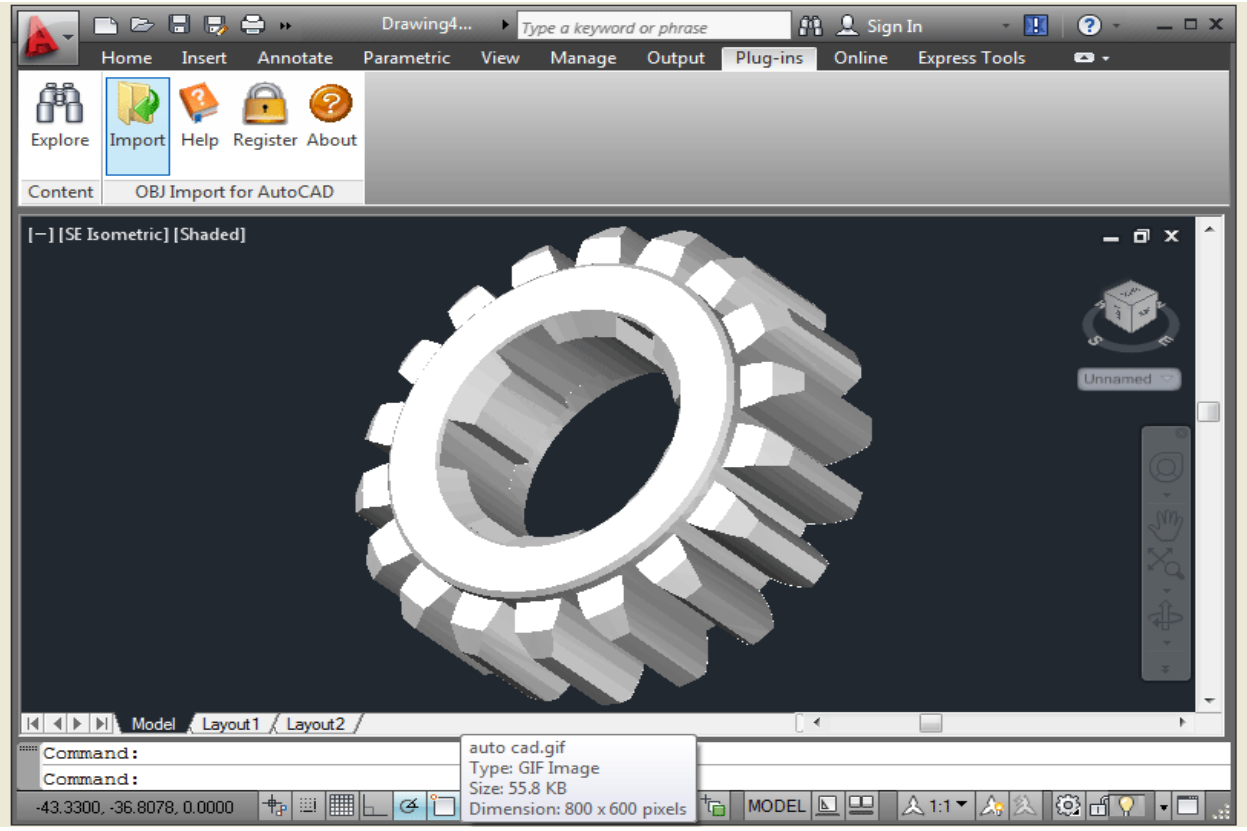
CNC/CAD/CAM DEPT. (COURSE-3)

NAME OF THE COURSE : AUTOCAD 2D & 3D

DURATION OF THE COURSE : 30 DAYS

INTAKE CAPACITY : 30

MIN QUALIFICATION REQUIRED : I.T.I / DIPLOMA / S.S.C



TOPICS COVERED :

- Introduction of Computer Aided Design, Applications Of CAD, Main Menu of AUTOCAD
- About **2d** Drawings & **3d** Drawings, Axises, Planes, Coordinate System, Methods of Coordinate System (Absolute, Relative, Polar)
- Commands of New File, Limits, Line, Erase, Save, Save As, Open, Units, Exit.
- Snap, Grid, Ortho, O snap, Polartracking Features, Circle, Arc, Rectangle, Polygon, LWT.

AUTOCAD 2D & 3D :

- Copy, Mirror, Offset, Move, Rotate, P Line, Explode, P Edit.Ellipse, Trim, Fillet, Chamfer, Scale, P Edit, Do Nut, Spline.
- Line Type, Lt Scale, Extend, Lengthen, Break, Grips, Dd Grips.Zoom.
- Area, Id, Dist ,List, Db List, Time, Save Time, Drawing Props.
- Filter, Q Select, Block, W Block, Insert, Explode, M Insert, Cal.
- B Hatch, Hatch Edit, Group, M Line, Mi Style, Mi Edit, Trace, Solid.,
- Text, Style, Dd Edit, M Text, Q Text, Mirror, Text, Layer.
- Properties, Match Properties, Region, Dimension Menu Bar, Dimension Style, Snap, Ch Prop.
- Ellipse, Ellipse In Isometrics, Isometric Drawing Practice, Plot, View Menu, 2d Wire Frame, 3d Wire Frame, Hidden**.**
- Aperture, Cursor Size, Layout, 3d Views, Flat Shaded, Gouraud Shaded, Flat Shaded Edge on, Gouraud Shaded EdgeoOn.
- Box, Sphere, Cylinder, Cone, Wedge, Torus, 3d Orbit, 3d Continous Orbit.
- Union, Subtract, Intersect, Extrude, Extrude Faces, Revolve, Slice, Section.
- Interfere, Move Faces, Offset Faces, Delete Faces, Rotate Faces, Taperfaces, Copyfaces, and Colorfaces.
- Copy, Edges, Color, Edges, Shell, Imprint, Clean, Separate, Check.
- 3d Drawings Practise, Printing of Layouts

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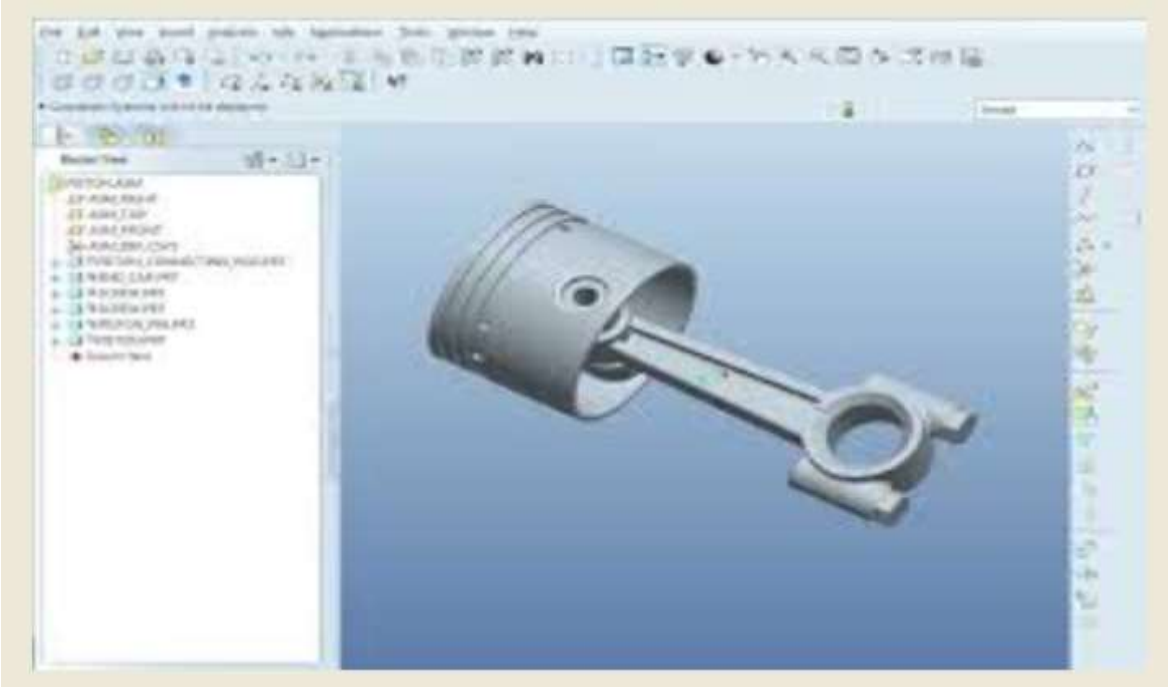
CNC/CAD/CAM DEPT. (COURSE-4)

NAME OF THE COURSE : PRO-ENGINEER

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED : I.T.I / DIPLOMA / B-TECH



TOPICS COVERED :

- Introduction about Modules, Basic Commands, Main Menu of PRO-ENGINEER Package
- **Sketcher Module :** LINE (CREATE TWO POINT LINE, create lines tangent to two entities, centre line), rectangle, circle (circle by picking the centre & a point on the circle, concentric circle, 3 points circle, circle tangent to 3 entities, ellipse), ARC (arc, concentric arc, arc by picking its centre &end points, tangent to 3 entities arc, conic arc), FILLET (circular fillet, elliptical fillet)

PRO-ENGINEER :

- **Spline Curve :** Create Points, Create Defining Dimensions, modify the values of Dimensions. Constraints
- **Part Module :** Explain about Part tools: **1.** Extrude Tool-Solid, Surface. **2.** Revolve Tool-Surface, Solid) Variable Section Sweep Tool, Boundary Blend Tool, Style Tool, Sketch Tool, Chamfer Tool, Round Tool, Draft Tool**.**

  Rib Tool, Shell Tool, Hole Tool: Counter Bore Hole, Counter Sink Hole. Mirror Tool, Trim Tool, Pattern Tools-Dimension, Direction, Axis, Fill. Datum Plane Tool, Datum Axis Tool, Datum Curve Tool, Datum Point Tool, Datum Co-Ordinate System Tool, Analysis Feature-

  Sweep Tool-Protrusion, Thin Protrusion, Cut, Thin Cut, Surface Blend Tool Protrusion, Thin Protrusion, Cut, Thin Cut, Surface. Swept Blend Protrusion, Thin Protrusion, Cut, Thin Cut, Surface. Helical Sweep Tool Protrusion, Thin Protrusion, Cut, Thin Cut, Surface**.**
  And also explain about Standard Tool Bars: File, Edit, Views, Model Display, Family Tables, User Defined Feature, Relations**.**

- **Assembly Module :** Introduction, basic steps to make assembly, Tools add Component To Assembly, Create a Component in Assembly. Explain about Constraints tools: Mate, Align, Insert, Coordinate System, Tangent, Point on Line, Point on Surface, Edge on Surface, Automatic**.**

- **Drawing Module :** Introduction: Specify Templates: Use Template, Empty with Format, Empty: Portrait, Landscape, Variable. Drawing Views (Categories) View Type, Visible Area, Scale, Sections, View States, View Display, Organ, Alignment**.**

- **Drawing Views :** General, Projection, Detailed, Aerially, Revolved. Show & Erase Box. Tables and Text Creation: Text Size, Text Symbols, Font Display, Scale, Hole Table, Bill of material, bom ballans repeat region

PRACTICING OF TRAINING PROJECT

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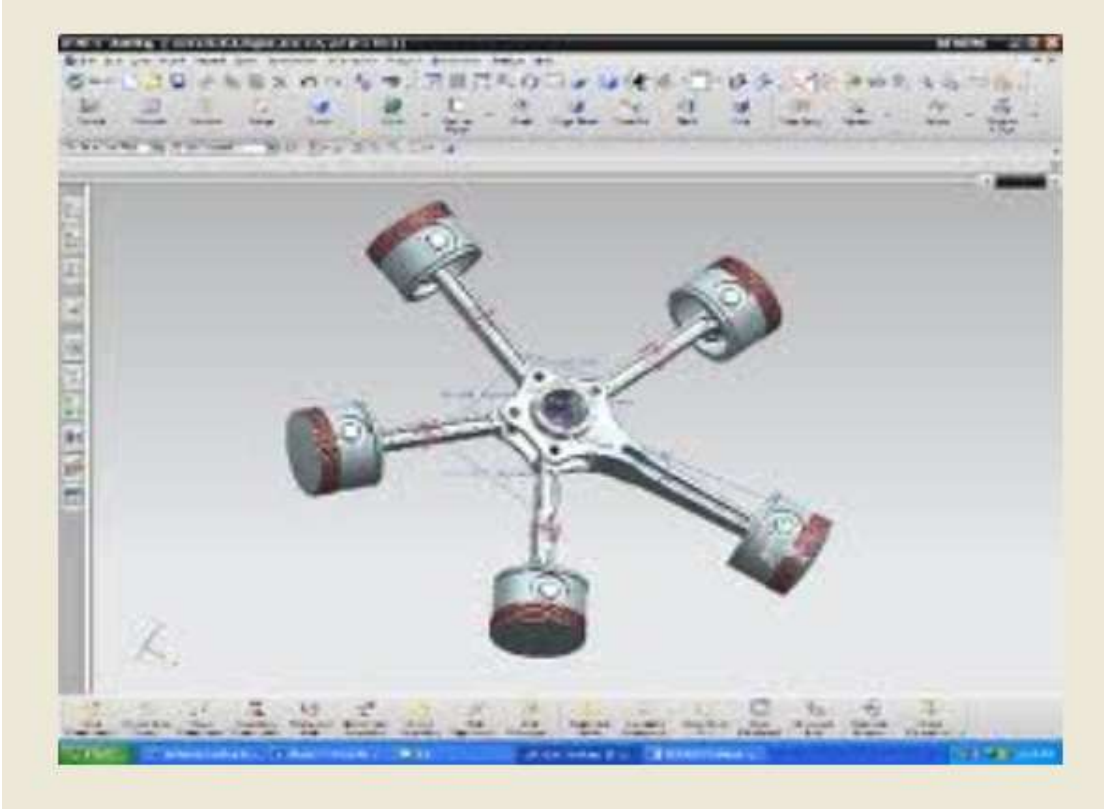
CNC/CAD/CAM DEPT. (COURSE-5)

NAME OF THE COURSE : UNIGRAPHICS - CAD/CAM

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED : I.T.I / DIPLOMA / B-TECH



TOPICS COVERED :

- Introduction about modules main menu of **Unigraphics** Package

  GATEWAY: Getting Started in Nx4**,** Tool Bars and Dialogs**,** Co-Ordinate Systems, Organizing Parts**,** Common Tools **(**Class Selection, Point Constructor, Vector Constructor), Basic Curves. Splines, Additionl Curve Options, Editing Curves

UNIGRAPHICS-CAD/CAM :

- **Sketcher :** Sketching in Unigraphics Nx4, General Procedure for using Sketches, The Basics, Naming the Sketch, Sketch Geometry, Constraints, Replacement Geometry, Size Constrains, Working With Sketches, Thedegree-Of-Freedom (DOF) Arrows, Sketch Preferences

  Listing the Expressions Associated with a Sketch, Positioning a Sketch, Reattach Sketch,using Associative Points, Adding Extracted Curves to a Sketch, Constraining Sketches-Exercises

- **Part Modeling** : Overview of Modeling, Creating a Support Block, Creating a Slotted Fixture, Editing Features, Practice Projects
- **Free Form Modeling:** Overview of free from Modeling, Ruled, Through Curve Mesh, Swept, Extensions, Fillet Surface, Face Blend, Bounded Plane, Bridge, Trimmed Sheet
- **Assembly Modeling**: Over View of Assembly Modeling, The Assembly Navigator, Bottom-Up Assemblies, Reference Sets, Top-Down Assemblies, Mating Conditions, Exploded Views and Components, Miscellaneous Topics, Assembly Project

- **Drafting**: Creating Drawings, Detail and Auxillary Views, Dimensions, Notes and Labels, Section Views, Broken Views, Break Out Section Views, Ordinate Dimensions

UNIGRAPHICS MANUFACTURING:

Planer And Cavity Milling : Planer Milling-Single Level, Planer Milling-Multi Level, Face Milling, Cavity Milling,

Z Level Milling:

Surface Contouring: Area Milling Drive Method, Flow Cut Drive Method

Drilling

PRACTICING OF TRAINING PROJECT

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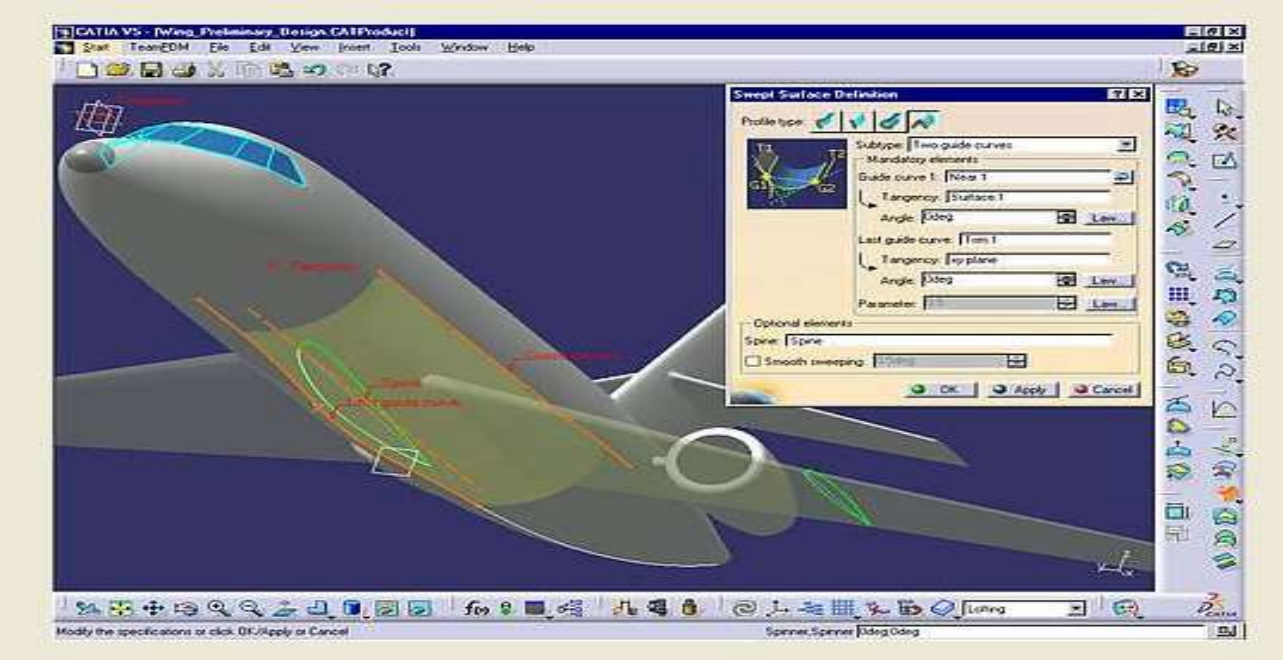
CNC/CAD/CAM DEPT. (COURSE-6)

NAME OF THE COURSE : CATIA

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED : I.T.I / DIPLOMA / B-TECH



TOPICS COVERED :

- Introduction about Modules, Main Menu of Tools of CATIA Package
- **Sketcher Module**: Line (Create Two Point Line, Create Lines Tangent to Two Entities, Centre Line), Rectangle, Circle (Circle By Picking The Centre & A Point on The Circle, Concentric Circle,3 Points Circle, Circle Tangent To 3 Entities, Ellipse), Arc (Arc, Concentric Arc, Arc By Picking Its Centre &End Points, Tangent To 3 Entities Arc, Conic Arc), Fillet (Circular Fillet, Elliptical Fillet)

- Spline Curve, Create Points, Create Defining Dimensions, Modify the Values of Dimensions), **C**onstraints (make line or two vertices vertically, make line or two vertices horizontally, make two entities perpendiculars, make two entities tangent, place point on middle of the line, create same points, or collinear constraint, make two points symmetric about centre line, create equal lengths, equal radius or same curvature constraint, make two lines, parallel ,text as a part of a section, trim: dynamically trim section, trim entities to other entity, divide on entity at the point of selection, mirror selected entities)

CATIA

- **Part Module**: About Part Tools: **1.**Sketch Based Features . **2.** Pad **3.S**haft **4.**Multi Pad, Drafted Filleted Pad, Variable Section, Sketch Tool, Chamfer Tool, Rib Tool, Slot Tool, Hole Tool, Groove, Solid Combine, Stiffner-Multi Sections Solids, Mirror Tool, Trim Tool, Pattern Tools-Dimension, Direction, Axis, Fill
- View Mode : Shading ,Shading With Edges ,Shading With Edges Without Smooth Edges & Hidden Edges
- **Dress Up Features** : Fillets, Chordal Fillets, Face, Fillet Tirtangent Fillet, Chamber Drafts, Shafts, Thickness, Thread/Tap Remove Face & Replace Face**.** Explain About Standard Tool Bars File, Edit, Views, Model Display, Family Tables, User Defined Feature, Relations**.**
- **Assembly Module**: Introduction, Basic Steps to make Assembly, Tools: Add Component to Assembly, Create a Component in Assembly. Explain about Constraints Tools: Mate, Align, Insert, Coordinate System, Tangent, Point on Line, Point On Surface, Edge on Surface, Automatic**.** Edit Tools: Project, Trim, Extend, Offset, Thicken, Solidity, Repeat, Replace, Supers, Resume, Delete, And Set Up, User Defined Feature, Tranformation Features 3d Geomerty
- **Drawing Module**: Introduction: Specify Templates: Use Template, Empty With Format, Empty: Portrait, Landscape, Variable ,Drawing Views (Categories) View Type, Visible Area, Scale, Sections, View States, View Display, Organ, Alignment**,** General, Projection, Detailed, Aerially, Revolved,Show & Erase Box. Tables and Text Creation: Text Size, Text Symbols, Font Display, Scale
- **Wireframe Surface Desgin/Surfaces**: Surface, Wirefram, Projection, Plane, Enerative Sheet Metal Design Wall, Wall on Edge, Metal Design Cuttimg, Stamping, Bending
- **Drafting:** New Drawing Creation**,** Views, Projections .Dimensions.
- **Basic Manufacturing And Practicing Of Training Project**

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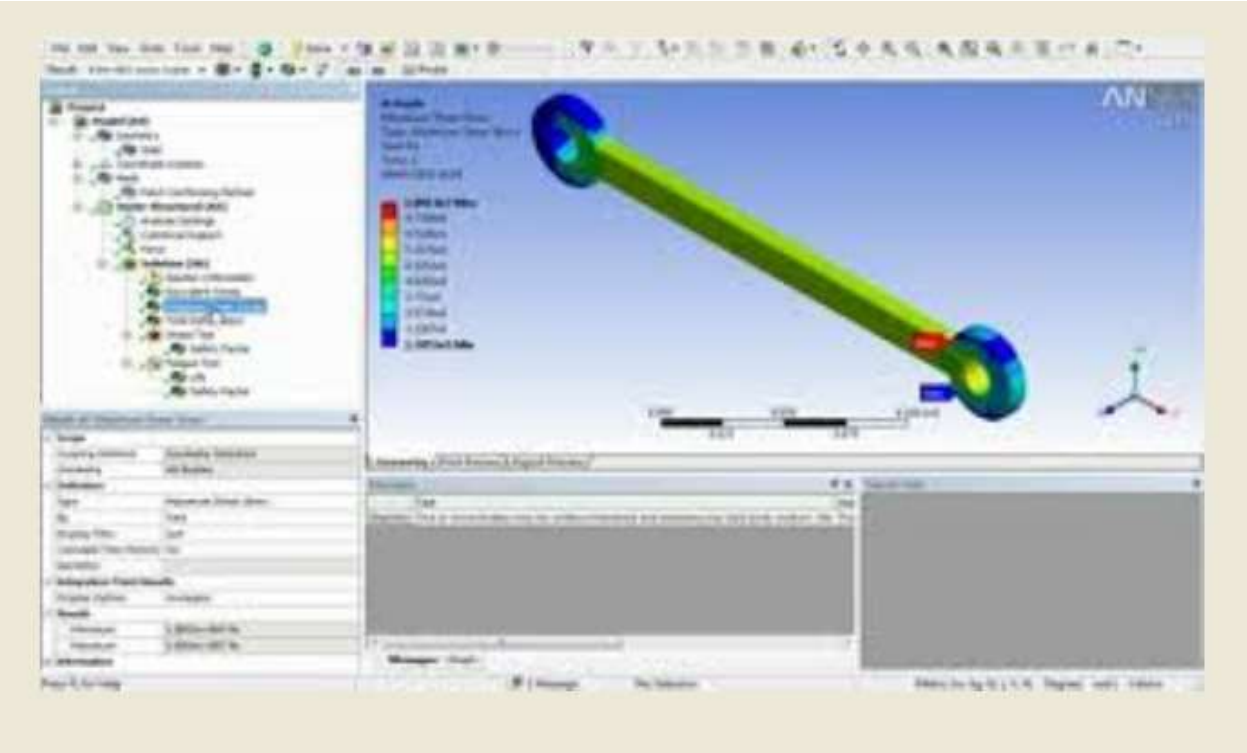
CNC/CAD/CAM DEPT. (COURSE-7)

NAME OF THE COURSE : ANSYS

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 20

MIN QUALIFICATION REQUIRED : DIPLOMA / B-TECH



TOPICS COVERED :

- Introduction about Finite Element Analysis and ANSYS
- **Structural Analysis** - static analysis–linear, non-linear
- **Structural Analysis -**Dynamic Analysis-Modal, Harmonic, Transient
- **Thermal Analysis :** Steady State ,Transient
- **Fluid flow Analysis**
- **Coupled field Analysis**

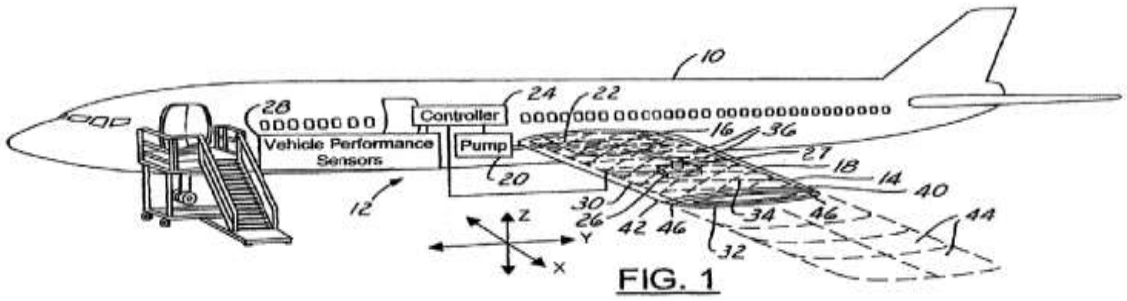
CNC/CAD/CAM DEPT. (COURSE-8)

NAME OF THE COURSE : MINI PROJECT

DURATION OF THE COURSE : 30 DAYS

INTAKE CAPACITY : 50

MIN QUALIFICATION REQUIRED : DIPLOMA / B-TECH



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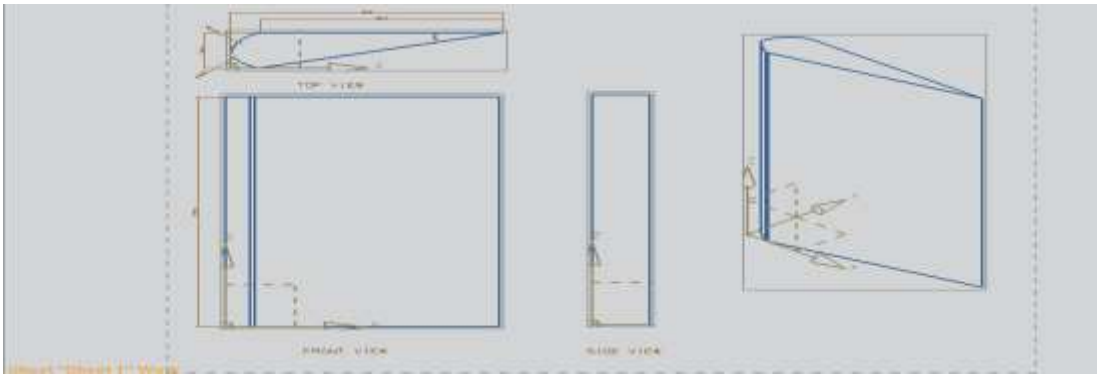

TOPICS COVERED :

- Theory Classes will be conducted based on Project selected by the Candidate/Batch

  -WEEK-1

- Practical Classes will be Conducted on CNC Machines/System, Based on the Project selected by Candidate/Batch

  -WEEK-2

- Preparation of the model on the CNC Machines /Designing on the system

  -WEEK-3

- Guidence to prepare the Records/Drawings Etc

  -WEEK-4

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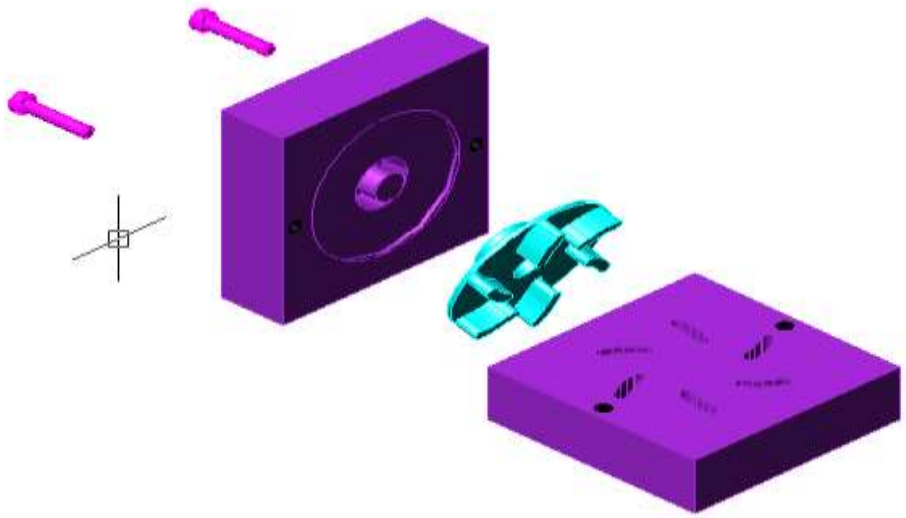
CNC/CAD/CAM DEPT. (COURSE-9)

NAME OF THE COURSE : MAIN PROJECT

DURATION OF THE COURSE : 45 DAYS

INTAKE CAPACITY : 50

MIN QUALIFICATION REQUIRED : DIPLOMA / B-TECH



TOPICS COVERED :

- Theory classes will be conducted based on project selected by the Candidate/Batch **-WEEK-1**
- CAD/CAM Moedeling Package **-WEEK-2**
- CAD/CAM Manufacturing Package **-WEEK-3**
- Practical classes will be conducted on CNC Machines/System, Based on the project selected by Candidate/Batch **-WEEK-4**
- Preparation of the component on the CNC Machines/Designing and Generating the programming by the CAD/CAM Software **-WEEK-5**
- Guidence to prepare the Rrecords/Drawings Etc **-WEEK-6**

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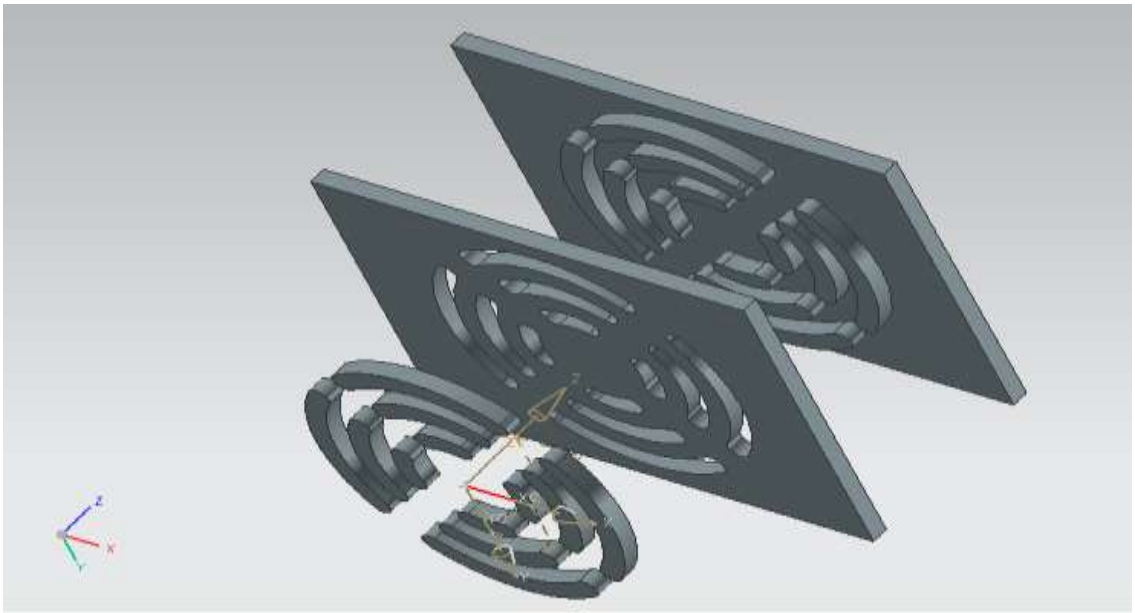
CNC/CAD/CAM DEPT. (COURSE-10)

NAME OF THE COURSE : INTERNSHIP (MECHANICAL)

DURATION OF THE COURSE : 6 MONTHS

INTAKE CAPACITY : 50

MIN QUALIFICATION REQUIRED : B-TECH



TOPICS COVERED :

- It is a combination of different CAD/CAM Courses, Analysis Course and manual Part programming of CNC Lathe, CNC Milling
- Hands on exeperience on CNC Machines
- Industrial visits at manufacturing units
- Project: Copmponent to be prepared on the Machine

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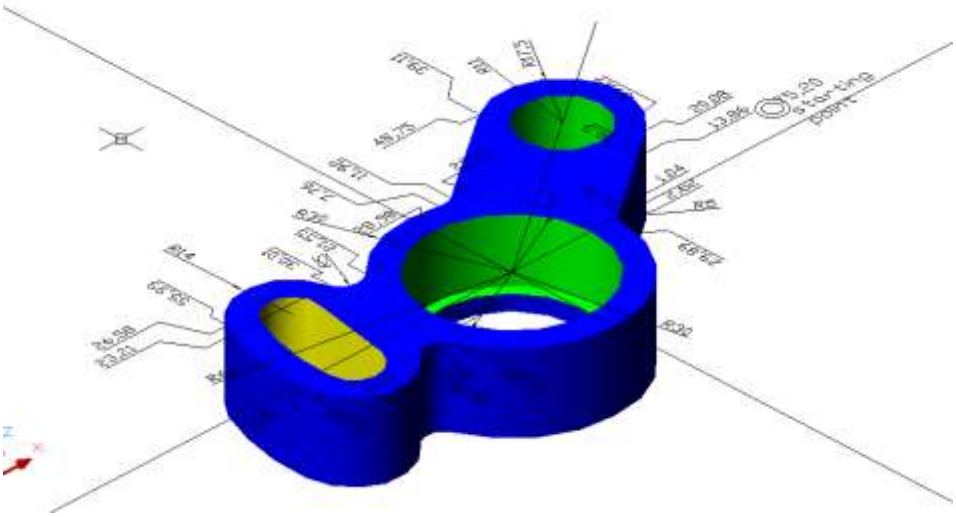
CNC/CAD/CAM DEPT. (COURSE-11)

NAME OF THE COURSE : INDUSTRIAL TRAINING (MECHANICAL)

DURATION OF THE COURSE : 6 MONTHS

INTAKE CAPACITY : 50

MIN QUALIFICATION REQUIRED : DIPLOMA



TOPICS COVERED :

- About Machines, Tools, Measuring Instrunents, GeometricalDimensions and Tolerances,
- It is a combination of different CAD/CAM Courses, Analysis Course and manual part programming of CNC Lathe, CNC Milling
- Hands on exeperience on CNC Machines
- Industrial visits at Manufacturing units

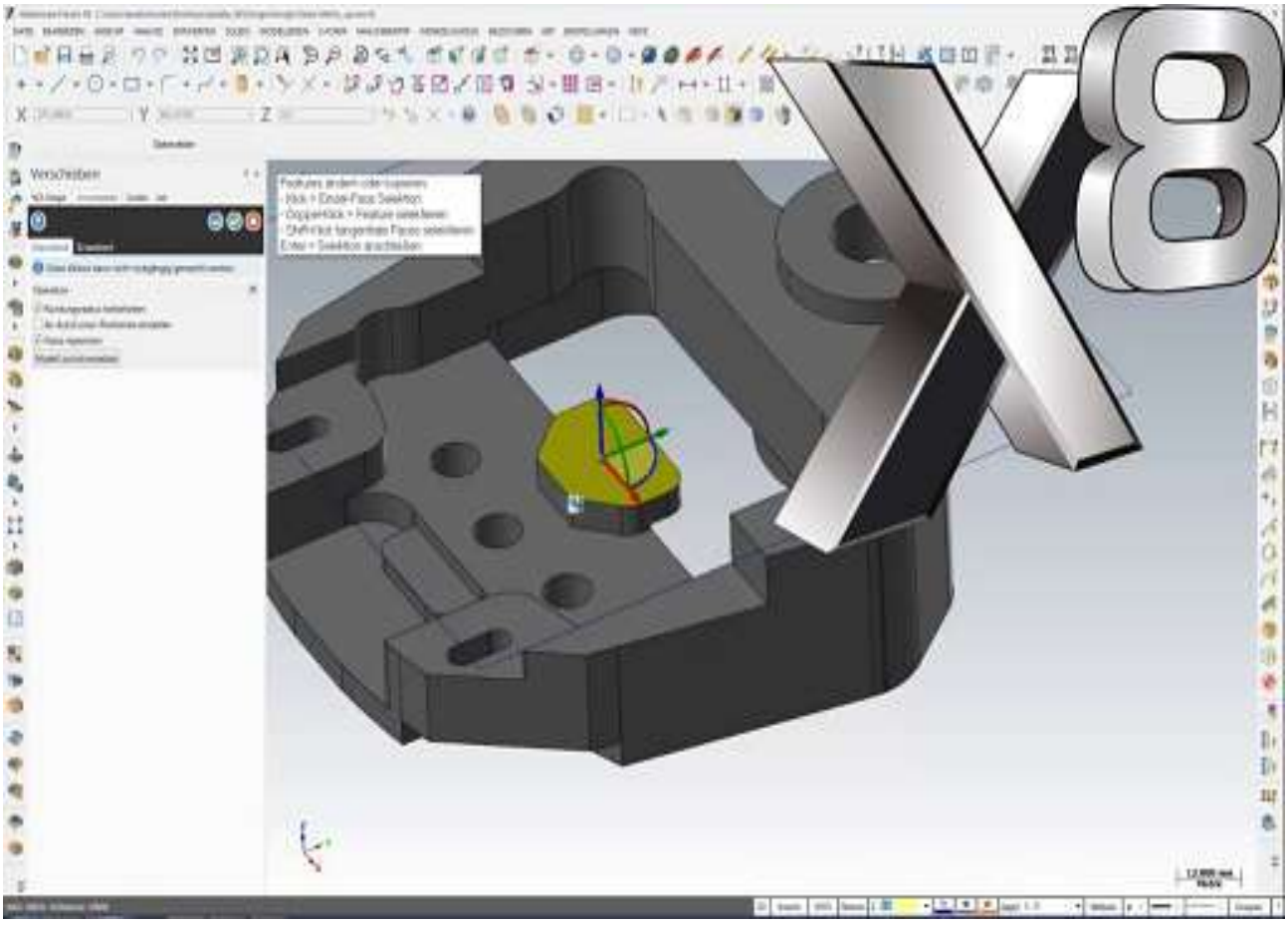
CNC/CAD/CAM Dept. (COURSE-12)

Name of the Course : MASTER CAM

Duration of the Course : **45 Days**

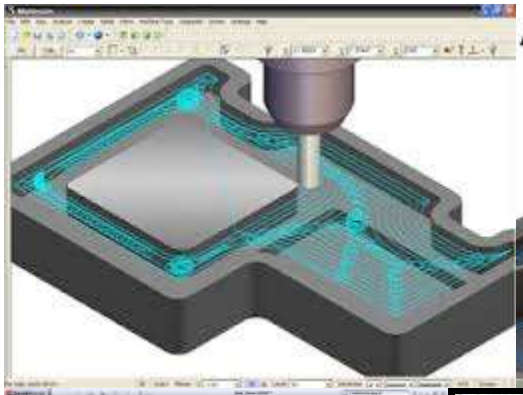
Intake Capacity : 20

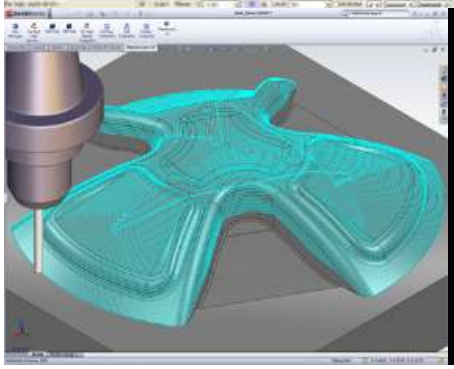
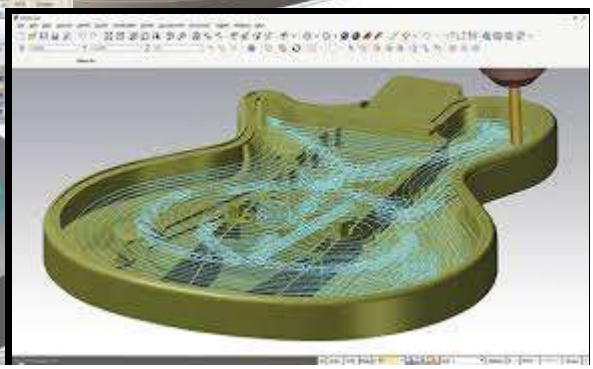
Min Qualification Required : ITI / Diploma /B-Tech/ S.S.C plus 2 Yrs. Exp.

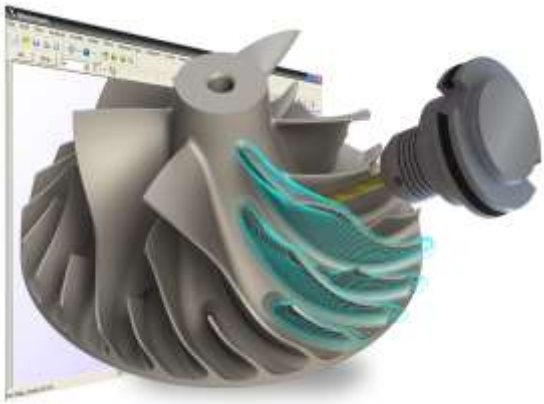
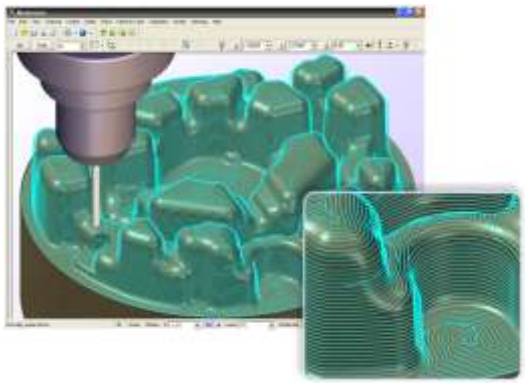


TOPICS COVERED :

- Introduction of about main menu
- Basics of File Management
- **2D**-Desining
- **Creating Tools** -
  Point ,Line,Arc,Fillet,Chamfer,Spline,Curve,Rectangle,Polygon,Ellipse,Spiral,helix
- **Drafting** - Creating Dimensions Symbols And Hatching
- **3DModeling**
  - **Primitives** - Cylinder, Cone, Block, Spear, Torus
  - 3D Modeling Tools Like Extrude, Revolve, Sweep, Loft, Fillet, Chamfer, Shell, Trim, Thicken, draft, Boolean (Add, Subtract, Intersect)
  - Patterns - Rectangular, Circular, Manual Pattern.
  - Solids From Surfaces & Surfaces From Solids.
- **Modifying Tool bars**
- **X-FORM** - translate**,** Mirror, Rotate, Scale, Dynamic Xform, Move To Origin, Offset, Offset Contour, Project.
- **ANALYZE** - Analyzing of designs and manufacturing process.
- **MANUFACTURING**
  - **Milling**
    - All 2d milling operations

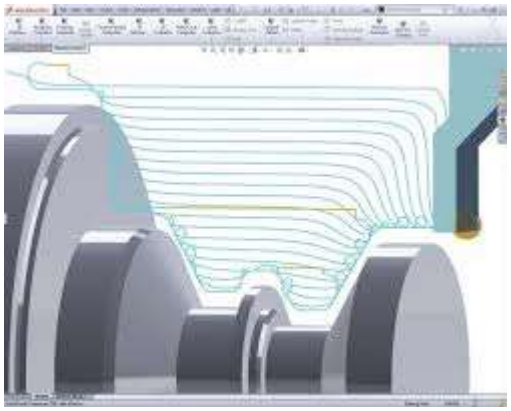
- 




- 2d dynamic machining
- Surface rough
- Surface finish
- Surface high speed

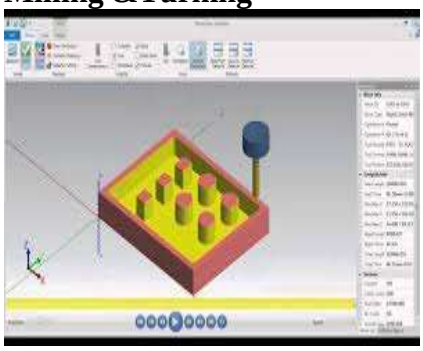
➢ **Turning**

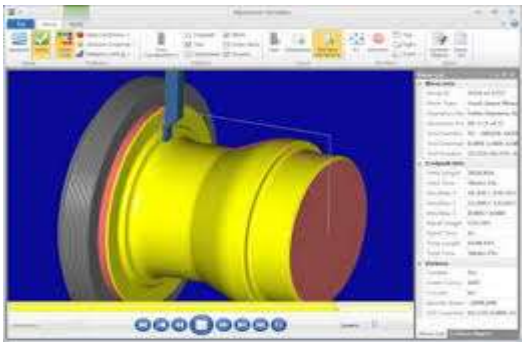
- All types of turning operations - roughing turning, facing, finishing, threading, grooving, plunge turning, contour rough, dynamic rough, drilling, boring and cycles.



- **MACHINE SIMULATION**

- **Milling &Turning**





CNC/CAD/CAM DEPT. (COURSE-13)

Name of the Course **:** MASTER CERTIFICATE COURSE IN CNC&CAD/CAM

Duration of the Course **: 3 months**

Intake Capacity **:** 20

Min Qualification Required **:** ITI / Diploma /B-Tech/ S.S.C plus 2 Yrs. Exp.

TOPICS COVERED :

- This course is designed to make expertise in the area of cnc programming- milling ,turning. CAD/CAM like unigraphics and general topics in the quality area

- Introduction of CNC Milling Machine, Lathe Machine about Controllers, Coordinate System of the Machines, about Cutting Tools, Operations, Main Parts of the Machines

- Method of Progrmming (Absolute And Relative), Tool paths with Dimensional Coordinates

- Main Functions and Adresses, G-Codes, M-Codes, Operating Modes
  THEORY:

CNC PROGRAMMING & OPERATIONs -Milling , Turning

- Programming Structure , Centre line Programming with commands

- About Referance Return, Zero Offset, Geometrico Offset, Tool Length Compansatations

- Programming on Solids

- Sub-programmes

- About Cutter Radius Compansatation, Tool nose Radius compansatation and its Codes Of G40, G41, G42 and using Models of profile Operations,

- Canned Cycles-Drilling, Boring, Tapping

- Multiple Repetitive Cycles -turning G70,G71,G72,G73,G74,G75 etc

- Direct Drawing Programmes-Turning

- Polar Coordinate and Mirror Programming

Practical s on cnc milling,turning

- Introduction about Control Panel, Machine Axis, Homing / Referance , Programming Entering Practise

- Taking Edge and Centre Offsets on Machine

- Plain, Profile Milling Operation on Machine

- Drilling Cycles with G81,G82,G83,G73 Codes and Tapping Cycles, Fixing and **c**hanging of tools with automatic tool changer

- Programmes execution with Cutter radius Compansatation and Tool nose radius
- compansatation like Profile, Operations Etc

- Face Milling, Pocket Milling, Profiles Operations with Subprogrammes

- Boring Operations with G85,G86,G76,G87 Codes
  Multiple Repetitive Cycles -turning G70,G71,G72,G73,G74,G75 etc

- Mirror Operation and Left Out Codes, Commands
- Editing Commands Like Copy, Move, Merge, Change, Back Ground Editing, Graphics Etc

UNIGRAPHICS - CAD/CAM :

TOPICS COVERED :

- Introduction about modules main menu of **Unigraphics** Package

  GATEWAY: Getting Started in Nx4**,** Tool Bars and Dialogs**,** Co-Ordinate Systems, Organizing Parts**,** Common Tools **(**Class Selection, Point Constructor, Vector Constructor), Basic Curves. Splines, Additionl Curve Options, Editing Curves

UNIGRAPHICS-CAD/CAM :

- **Sketcher :** Sketching in Unigraphics Nx4, General Procedure for using Sketches, The Basics, Naming the Sketch, Sketch Geometry, Constraints, Replacement Geometry, Size Constrains, Working With Sketches, Thedegree-Of-Freedom (DOF) Arrows, Sketch Preferences

  Listing the Expressions Associated with a Sketch, Positioning a Sketch, Reattach Sketch,using Associative Points, Adding Extracted Curves to a Sketch, Constraining Sketches-Exercises

- **Part Modeling** : Overview of Modeling, Creating a Support Block, Creating a Slotted Fixture, Editing Features, Practice Projects
- **Free Form Modeling:** Overview of free from Modeling, Ruled, Through Curve Mesh, Swept, Extensions, Fillet Surface, Face Blend, Bounded Plane, Bridge, Trimmed Sheet
- **Assembly Modeling**: Over View of Assembly Modeling, The Assembly Navigator, Bottom-Up Assemblies, Reference Sets, Top-Down Assemblies, Mating Conditions, Exploded Views and Components, Miscellaneous Topics, Assembly Project

- **Drafting**: Creating Drawings, Detail and Auxillary Views, Dimensions, Notes and Labels, Section Views, Broken Views, Break Out Section Views, Ordinate Dimensions

UNIGRAPHICS MANUFACTURING:

Planer And Cavity Milling : Planer Milling-Single Level, Planer Milling-Multi Level, Face Milling, Cavity Milling,

Z Level Milling:

Surface Contouring: Area Milling Drive Method, Flow Cut Drive Method

Drilling

QUALITY CONTROL:

TOPICS COVERED :

- **MEASURING INSTRUMENTS:**
- **DOCUMENTATION**
- **VISUVAL INSPECTION REPORT:**
- **FIRST INSPECTION REPORT:**
- **DIMENSION CHECK REPORT**

CNC/CAD/CAM DEPT. (COURSE-14)

Name of the Course : QUALITY CONTROL FOR CNC WORKSHOPS

Duration of the Course : 1 month

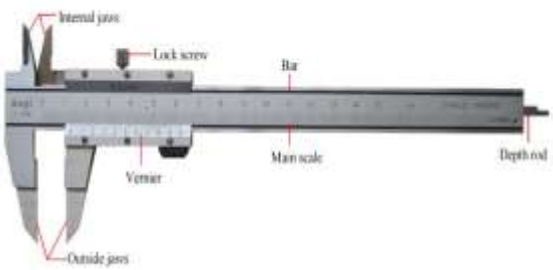
Intake Capacity : 20

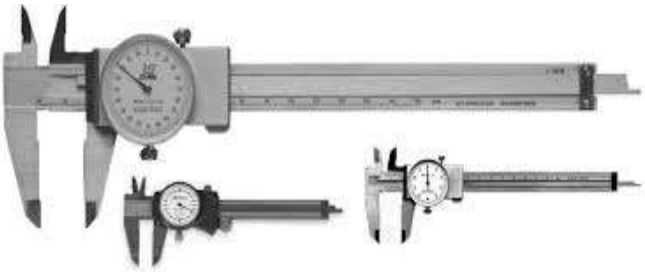
Min Qualification Required : ITI / Diploma /B-Tech/ S.S.C plus 2 Yrs. Exp.

TOPICS COVERED :

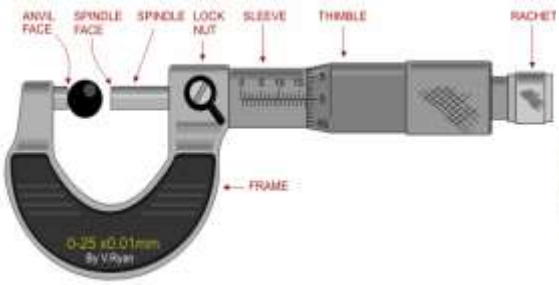
MEASURING INSTRUMENTS:

- **How To Use Following Measuring Instruments.**
- **Vernier caliper**



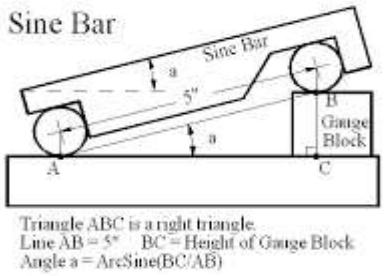


- **Micrometers**



- **Height Gauge**

- **Sine Bar**



- **Plug Gauge.**
- **Ring Gauge(GO & NO GO).**
- **Bore Gauge**

- **Dial Indicator**

- **Depth Micrometer**



- **Depth Vernier**


- **Inside Micrometer**



- **Dial Bore Gauge**


- Air Gauge
- Pressure Gauges
- Electronics Related Devices for measuring Resistance, Current Voltage, Multimeter

- **DOCUMENTATION:**

- QAP(Quality Assurance Procedure)-Drawings with Tolerances.
- ATP(Acceptance Test Procedure).
- IS- Standards, Tolerances Charts.
- Dimensions Check Report.
- Calibration (Measuring Instrument with certificates & validity expiry date)
- Visual Inspection Report.

- **F.I.R** (First Inspection Report)-This Inspection shall be done while component is under process.

- **MA REPORTS** (Material Analysis).
- Chemical Test Report
- Mechanical Test Report
- Ultra sonic Test Report

- **FUNCTIONAL TEST REPORT**

    - Leakage test (for Pneumatic & Hydraulic)
    - proof pressure test
    - tightness test
    - shock test

- **DIMENSION CHECK REPORT**

- **RESELECTION ANALYSIS REPORT**

- **RECTIFICATION REPORT**

- **INTERNAL AUDITING**

CNC/CAD/CAM DEPT. (COURSE-15)

Name of the Course : GEOMETRICAL DIMENSIONS AND TOLERANCES

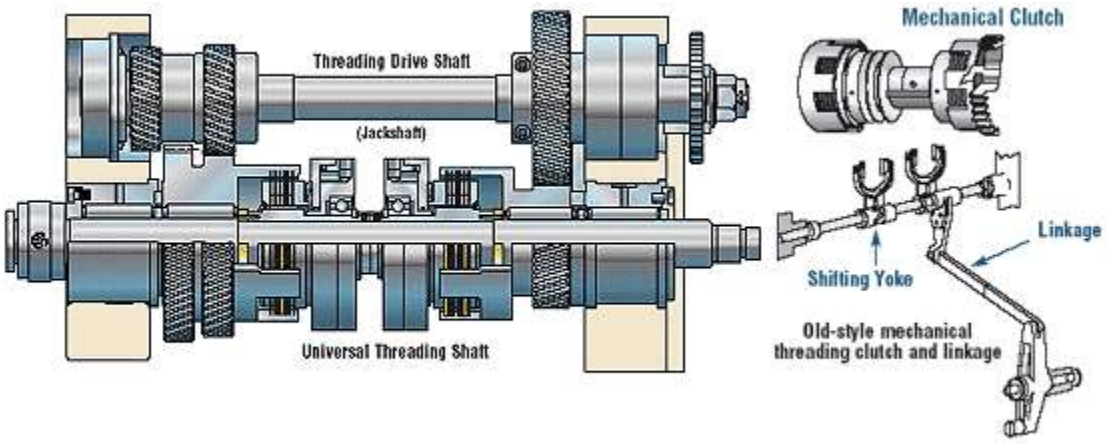
sDuration of the Course : 1 month

Intake Capacity : 20

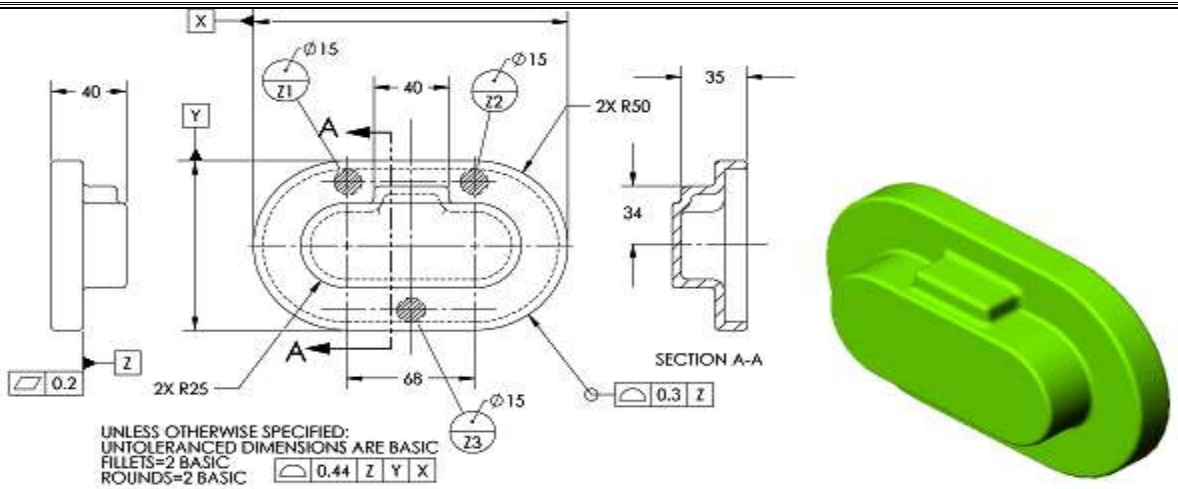
Min Qualification Required : ITI / Diploma /B-Tech/ S.S.C plus 2 Yrs. Exp.

TOPICS COVERED :

- Introduction about engineering drawings
- Classification of drawings
- Principles of dimensioning
- Limits
- FITS-Clearance Fit, Transition Fit, Interference Fit



- **TOLERANCES -tolerances of form and position**



- **Surface Roughness**
- **production drawings and process sheets**

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NTSC-HYD

ELECTRICAL ENGG MODULE

Electrical Engg Module is newly established training module in our NTSC, Hyderabad centre, it starts functioning for past 1.5 years.

Electrical Engg Module conducts Skill & Job oriented training program in field of industrial automation which includes PLC, VFD's, HMI & Servo drives.

In our module, we offer academic main projects and mini projects for engineering students.

Our Module regularly conducts workshop on Energy Auditing for working professionals were we demonstrate how to conserve the energy in industries.

In our module apart from conducting the regular training program, we also conduct workshop for final year students in field of automation.

Main Motto of conducting the workshop is to create the awareness about recent trends in Electrical Engg and to transfer the knowledge to student's community at reasonable rate.

Aim & Objectives of Electrical Engg Module is

- To ensure effective, structured and professional approach to the training.
- To develop, approve and renew the programs and plans used in students' training according to standards required by companies.
- To enhance the skill sets of trainees.
- To make trainees to employable in core field of Engg.

Electrical Engg module was well equipped with lab and infrastructure. Electrical Module working towards for delivering best quality for trainees and not for quantity.

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NTSC-HYD

NAME OF COURSE : PLC & DRIVES

COURSE DURATION : 1 MONTH

INTAKE CAPACITY : 25 PERSONS PER BATCH

MINIMUM QUALIFICATION REQUIRED FOR ADMISSION : ITI/DIPLOMA/B.E/B.TECH/

ABOUT COURSE

Mainly this course focus on following areas,

- **Basic Electrical Concepts & Relay,**
- **Programmable Logic controller (PLC) &**
- **Variable Frequency Drives (VFD)**

Course Contents

1. **Basic Concepts**
   - ✓ Earthling & Neutral
   - ✓ How to check healthiness of Earth in Industries & Residence.
   - ✓ How to lay earthling in industries as per Indian electricity rules.
   - ✓ Basic Tools in Industries.
   - ✓ Control Panel – Wiring Standards & laying of cables.
   - ✓ Control & Power Component – Selection & specification.
   - ✓ Designing of Hardware circuit using relay logic.
   - ✓ MCB, MCCB, HRC and Isolator selection.as per requirement.

Photos

2. PLC

- ✓ Evolution of PLC & Architecture of Selec PLC MM3010.
- ✓ Programming structure – Ladder Logic, FBD &STL.
- ✓ Types of Input – Analog (Voltage, Current) & Digital (Pushbutton, Sensor, limit switch).
- ✓ Addressing Modes of PLC, Scan Cycle & wiring rules of Sinking & sourcing concepts.
- ✓ Writing Ladder Logic Programming for Logic Gates, Multiplexer, Encoder, &Decoder.
- ✓ Communication protocol – Serial & Profinet.
- ✓ Interfacing PLC with inputs & outputs.
- ✓ Uploading & downloading concepts.
- ✓ Timer Concepts (On delay timer, Off delay timer, Pulse timer) – Theory & Practical's .
- ✓ Counter Concepts (Up counter, Down Counter & UP Down Counter).
- ✓ Logic Instructions (AND, OR, NOT, XOR) and Comparison Instructions (GE, GT, LT, LE, NE, EQ).
- ✓ Developing small application program using PLC .

3. Variable Frequency Drives

- ✓ Testing Of Drives & Motor.
- ✓ Working Principle, Internal architecture of VFD.
- ✓ V/F Control – Control Strategy.
- ✓ Configuration of Drives – Selection of Drives.
- ✓ Manual mode of Operation.
- ✓ Auto Mode of Operation using Digital Input and Analog input.
- ✓ Constant Speed Operation & Variable Speed operation.
- ✓ Four quadrant operation of 3 phase induction motor using VFD.

Photos

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NTSC-HYD

NAME OF COURSE : ADVANCED PLC & DRIVES

COURSE DURATION : 45 DAYS

INTAKE CAPACITY : 25 PERSONS PER BATCH

MINIMUM QUALIFICATION REQUIRED FOR ADMISSION : ITI/DIPLOMA/B.E/B.TECH

About Course

Mainly this course focus on following areas,

- Control Panel Designing,
- Hardwire / Relay Logic systems,
- Machine Programming & controlling through PLC,
- Variable Frequency Drives (VFD) &
- Interfacing of PLC with Drives.

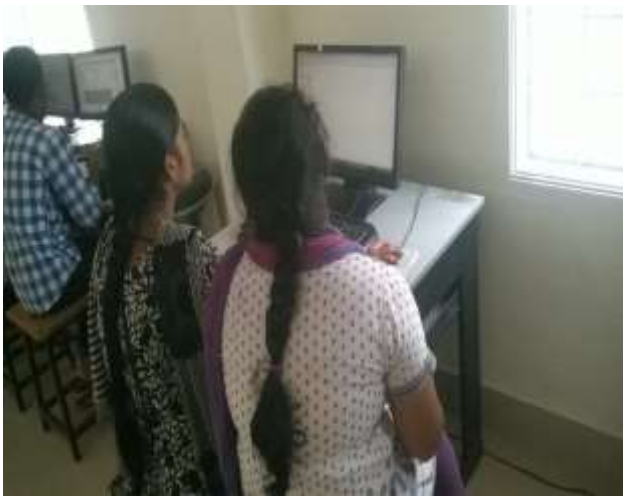
Course Contents

- **Relay logic Concepts**
  - ✓ Introduction of electrical equipments (Sensors, Proximity switch, Level switch, Limit switch, Photo electric switch, rotary encoder
  - ✓ Relay Concepts – Theory & Practical's
  - ✓ Contactor – Control & Power, Theory & Practical's
  - ✓ Push Button, switch – Concepts, Combining PB with Relay & Contactor
  - ✓ Concept of NO and NC and few problems on NO and NC, Contactor Concept (Power contactor, Control Contactor)
  - ✓ Practicals on Relays and Contactors.

➢ PLC Concepts

- ✓ At the beginning basic PLC , Selec CPU MM3010 will be taught in detail after students comfortable with these PLC then students will be taught with Siemens PLC S71200.
- ✓ Detailed information about PLC components (Power supply, Processor, CPU, Memory, I/O modules, Bus system, Communication systems).
- ✓ PLC Architecture, Sourcing and Sinking, Wiring rules of sourcing and sinking.
- ✓ Types of Input devices and Output devices, Scan Cycle, Different programming languages in PLC (Ladder Logic, Functional Block & Statement list).
- ✓ Contacts, Coils, Methods for writing the programs in the PLC, Implementing Logic gates using ladder logic.

Photos



➢ VFD's

- ✓ Theory on Drives – Need for drives , Configuration & Internal Configuration of Drives.
- ✓ Interfacing VFD with Motor – Manual Mode of Operation & Auto mode of Operation with Digital Inputs.

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NTSC-HYD

Name of Course : INDUSTRIAL AUTOMATION
Course Duration : 2 Month
Intake Capacity : 25 Persons per Batch
Minimum Qualification Required for Admission : ITI/Diploma/B.E/B.Tech

About Course

Mainly this course focus on following areas,

- Hardwire / Relay Logic systems,
- Machine Programming & controlling through PLC,
- Variable Frequency Drives (VFD) ,
- Interfacing of PLC with Drives &
- Servo drives & Interfacing of PLC with servo drives.

Course Contents

1. PLC concepts

- ✓ Totally 3 PLC's will be taught in these course which includes Selec CPU MM3010 , Siemens PLC S71200 & Mitsubishi PLC NG16DN.
- ✓ PLC Architecture, Sourcing and Sinking, Wiring rules of sourcing and sinking.
- ✓ Timer Concepts (On delay timer, Off delay timer, Pulse timer) – Theory & Practical's .
- ✓ Counter Concepts (Up counter, Down Counter & UP Down Counter).
- ✓ Comparison Instructions (GE, GT, LT, LE, NE, EQ) and Arithmetic Instructions (ADD, SUB, MUL, DIV, INC, DEC).
- ✓ Writing the Real time Application pogramme in PLC.
- ✓ Checking the Complex Machine programming using offline simulation method.

2. Variable Frequency Drives (VFD)

- ✓ Theory on Drives – Need for drives , Configuration & Internal Configuration of Drives.
- ✓ Interfacing VFD with Motor – Manual Mode of Operation & Auto mode of Operation with Digital Inputs.

3. Servo Drives

- ✓ Servo Motor & Drive – Checking Methods.
- ✓ Selection of Servo Drive.
- ✓ Interfacing servo drive with PLC having Pulse Output.
- ✓ JOG mode of operation.
- ✓ Speed Control of Servo Drive – Without PLC & With PLC.
- ✓ Forward & Reverse operation of motor .
- ✓ Constant Speed mode of Operation.
- ✓ Position Control of Servo drives with help of PLC

4. HMI (Human Machine Interface)

- ✓ Selec HMI & Siemens HMI KP300 will be taught.
- ✓ Checking Physical IO status of PLC in HMI.
- ✓ Creating Text pages in HMI.
- ✓ Moving Timer, Counter values form HMI to PLC.
- ✓ Configuration of pushbuttons in HMI.
- ✓ Interfacing the HMI with PLC.
- ✓ Communication Protocol in HMI.
- ✓ Controlling Loads using HMI.

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NTSC-HYD

Name of Course : ENERGY AUDITING
Course Duration : 1 Month
Intake Capacity : 25 Persons per Batch
Minimum Qualification Required for Admission : ITI/Diploma/B.E/B.Tech

About Course

Mainly this course focus on following areas,

- **Energy Auditing Tools,**
- **Energy Management & Auditing,**
- **Financial Management & Project Management ,**
- **Energy Efficiency In Thermal Utilities and**
- **Energy Efficiency In Electrical Utilities**

Course Contents

1. **Energy Auditing Tools**
   - ✓ Equipment's - 3 Phase Power Analyzer, Lux Meter, Thermo Hygrometer, IR Pyrometer, Anemometer, Contact & Non-contact type Tachometer.
2. **Energy Management & Auditing**
   - ✓ Objective of Energy Management.
   - ✓ Types of Energy Audit.
   - ✓ Preliminary Energy Audit Methodology, Detailed Energy Audit – Pre Audit phase, Audit Phase & Post Audit phase.
   - ✓ Drawing process flow diagram -Identification of waste streams and obvious energy wastage.
   - ✓ Identification of Energy Conservation Opportunities - Energy generation, Energy distribution, Energy usage by processes and Fuel substitution.
3. **Financial Management & Project Management**
   - ✓ Financial analysis techniques – simple payback period, return on investment, net present value and internal rate of return.
   - ✓ Energy Proposals vs. Other Competitive proposals.
   - ✓ Time Value of Money , Calculation of NPV & Calculation of IRR for a Project.
   - ✓ What is Performance Contracting and Roles of ESCOS.
   - ✓ Steps in Project Management - Project Definition and Scope

Technical Design , Financing, Contracting, Implementation and Performance Monitoring.

- ✓ Project Management life cycle.
- ✓ Project Funding Sources – Internal & External Sources.
- ✓ Types Of Contracting - Traditional Contract, Extended Technical Guarantee/Service, Guaranteed Saving Performance Contract and Shared Savings Performance Contract.
- ✓ Project Planning using Gantt chart , Critical Path Method**,** Program Evaluation and Review Technique (PERT).
- ✓ Measurement & Verification (M&V).
- ✓ Energy Monitoring & Targeting - Establishing the existing pattern of energy consumption.
- ✓ Targeting is identification of desirable energy consumption level, and working towards achieving that level.

4. Energy Efficiency In Thermal Utilities

- ✓ Fuels & Combustion, Types of Fuel, Selection of Fuel.
- ✓ Boilers – Types, Evaluation of Boiler efficiency by direct & Indirect method. Energy Conservation opportunities.
- ✓ Steam System – sizing & designing. Steam Traps – Types. Energy Conservation opportunities.
- ✓ Furnaces – Types & Classification of Furnaces. Performance Evaluation of a Typical Furnace.
- ✓ Insulation & Refractories.
- ✓ FBC Boilers & Cogeneration.

5. Energy Efficiency In Electrical Utilities

- ✓ Electrical systems & Motors.
- ✓ Compressed Air systems – Types. Energy Conservation opportunities.
- ✓ HVAC Refrigeration & Air-conditioning systems.
- ✓ Pumps & Pumping system, cooling Tower, Lighting systems, Fans &Blower –Energy Conservation opportunities.

Photos

Name of Course : INDUSTRIAL DRIVES

Course Duration : 1 Month

Intake Capacity : 25 Persons per Batch

Minimum Qualification Required for Admission : ITI/Diploma/B.E/B.Tech

About Course

Mainly this course focus on following areas,

- **PLC Programming Concepts,**
- **Variable Frequency Drives &**
- **Servo Drives & Motor.**

Course Contents

1. PLC concepts

- ✓ Delta PLC CPU ES2 will be taught in detail – Architectures & I/O's.
- ✓ Detailed information about PLC components (Power supply, Processor, CPU, Memory, I/O modules, Bus system, Communication systems).
- ✓ PLC Architecture, Sourcing and Sinking, Wiring rules of sourcing and sinking.
- ✓ Types of Input devices and Output devices, Scan Cycle, Different programming languages in PLC (Ladder Logic, Functional Block & Statement list).
- ✓ Contacts, Coils, Methods for writing the programs in the PLC, Implementing Logic gates using ladder logic.
- ✓ Compiling, Downloading & uploading the program from systems to PLC.
- ✓ Simulation – Online & Offline modes.
- ✓ Timer Concepts (On delay timer, Off delay timer, Pulse timer) – Theory & Practical's .
- ✓ Counter Concepts (Up counter, Down Counter & UP Down Counter).

2. Variable Frequency Drives (VFD)

- ✓ Testing Of Drives & Motor.
- ✓ Working Principle, Internal architecture of VFD.
- ✓ V/F Control – Control Strategy.
- ✓ Configuration of Drives – Selection of Drives.
- ✓ Manual mode of Operation.
- ✓ Auto Mode of Operation using Digital Input and Analog input.
- ✓ Constant Speed Operation & Variable Speed operation.
- ✓ Four quadrant operation of 3 phase induction motor using VFD.

- ✓ Interfacing VFD with Motor – Manual Mode of Operation & Auto mode of Operation with Digital Inputs.
- ✓ FWD & Reverse Direction control of 3 phase induction motor using Drives.
- ✓ Four different speed & seven different speed operation of 3 phase induction motor using drives.

3. Servo Drives

- ✓ Servo Motor & Drive – Checking Methods.
- ✓ Selection of Servo Drive.
- ✓ Interfacing servo drive with PLC having Pulse Output.
- ✓ JOG mode of operation.
- ✓ Encoder – Feedback, connection details, configuration settings.
- ✓ Speed Control of Servo Drive – Without PLC & With PLC.
- ✓ Forward & Reverse operation of servo motor.
- ✓ Constant Speed mode of Operation.
- ✓ Position Control of Servo drives with help of PLC.

Photos

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Name of Course : INDUSTRIAL TRAINING

Course Duration : 6 Month

Intake Capacity : 50 Persons per Batch

Minimum Qualification Required for Admission : Diploma (EEE)

About Course

Mainly this course focus on following areas,

- Basic Electrical & Power electronic Concepts,
- Control Panel Designing,
- Hardwire / Relay Logic systems,
- PLC Programming Concepts,
- Variable Frequency Drives &
- Servo Drives & Motor.

Course Contents

1. Basic Concepts

- ✓ Earthing & Neutral
- ✓ How to check healthiness of Earth in Industries & Residence.
- ✓ How to lay earthling in industries as per Indian electricity rules.
- ✓ Basic Tools in Industries.
- ✓ Control Panel – Wiring Standards & laying of cables.
- ✓ Control & Power Component – Selection & specification.
- ✓ Designing of Hardware circuit using relay logic.
- ✓ MCB, MCCB, HRC and Isolator selection.as per requirement.
- ✓
- ✓ Wiring Standard - Symbols used in the electrical Drawing, How to read the industrial electrical drawing.
- ✓ Detailed study about the various types of cables used in the industries.
- ✓ Sensors Types – Detailed Explanation. Application of Sensors in industries. Push Button & limit switches – Types. Selection of Pushbuttons. Safety Guard – Application in Industries.

- ✓ Power Electronics – Basics & Converter. Semiconductor devices. Explaining the characteristics of SCR Families , DIAC, TRIAC, UJT,IGBT, MOSFET.
- ✓ Testing - Thyristor - Different Types. Converter configuration – Bridge Type – Half Wave converter, Full wave & Semi converter – Single Phase as well as three Phase.
- ✓ Power Electronics – Ac Voltage Controller / Regulator. Cycloconverter – 1 Phase & 3 Phases. Chopper – Basics. Different Types of Chopper – Detailed Explanation.

2. Practicals

- ✓ Delta PLC CPU ES2 will be taught in detail – Architectures & I/O's.
- ✓ Detailed information about PLC components (Power supply, Processor, CPU, Memory, I/O modules, Bus system, Communication systems).

3. Relay logic Concepts

- ✓ Introduction of electrical equipment's (Sensors, Proximity switch, Level switch, Limit switch, Photo electric switch, rotary encoder
- ✓ Relay Concepts – Theory & Practical's
- ✓ Contactor – Control & Power, Theory & Practical's
- ✓ Push Button, switch – Concepts, Combining PB with Relay & Contactor
- ✓ Concept of NO and NC and few problems on NO and NC, Contactor Concept (Power contactor, Control Contactor).

4. PLC concepts

- ✓ Selec PLC MM 3010, Delta PLC ES2 & Mitsubishi PLC NG16DN will be taught in detail. Programming concepts, Up loading & downloading .Simulation – online & offline method.
- ✓ Types of Input devices and Output devices, Scan Cycle, Different programming languages in PLC (Ladder Logic, Functional Block & Statement list).

5. Variable Frequency Drives (VFD)

- ✓ Theory on Drives – Need for drives , Configuration & Internal Configuration of Drives ,
- ✓ Interfacing VFD with Motor – Manual Mode of Operation & Auto mode of Operation with Digital Inputs.

6. Servo Drives

- ✓ Servo Motor & Drive – Checking

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NTSC-HYD

WORKSHOPS ARE BEING CONDUCTED ON FOLLOWING TOPICS

1. Energy Auditing for 1 Day
2. PLC's for 2 Days
3. Industrial Drives (VFD & Servo Drives) for 2 Days

1.Workshop on Energy Auditing

- ✓ General Aspects of Energy Management & Energy Audit
- ✓ Basics of Energy.
- ✓ Training on Energy Audit Equipment's.
- ✓ Live Audit in campus.
- ✓ Interpreting the Data taken from equipment's.

This workshop we will conduct either in college premises if college provide required infrastructure for demonstrating energy conservation or at NSIC Campus.

2. Workshop on PLC

- ✓ Hardwire Logic i.e Relay.
- ✓ Evolution of PLC.
- ✓ Basic concepts – Inputs & Outputs.
- ✓ Writing the Ladder logic.
- ✓ Interfacing the Hardware with PLC
- ✓ Downloading the program & Uploading the Program.
- ✓ Compiling the program.
- ✓ Simulation – Online & Offline.

3.Workshop on Industrial Drives

- ✓ Basics on PLC
- ✓ VFD
- ✓ Working Principle
- ✓ Selection of Motor
- ✓ Interfacing PLC with VFD
- ✓ Application – Constant Speed & Variable Speed
- ✓ Servo Drive & Servo Motor
- ✓ Selection of Servo Motor
- ✓ Interfacing Servo Drive with Servo Motor
- ✓ Application - Speed Control & Position Control

Name of Course : **MAIN & MINI PROJECTS**

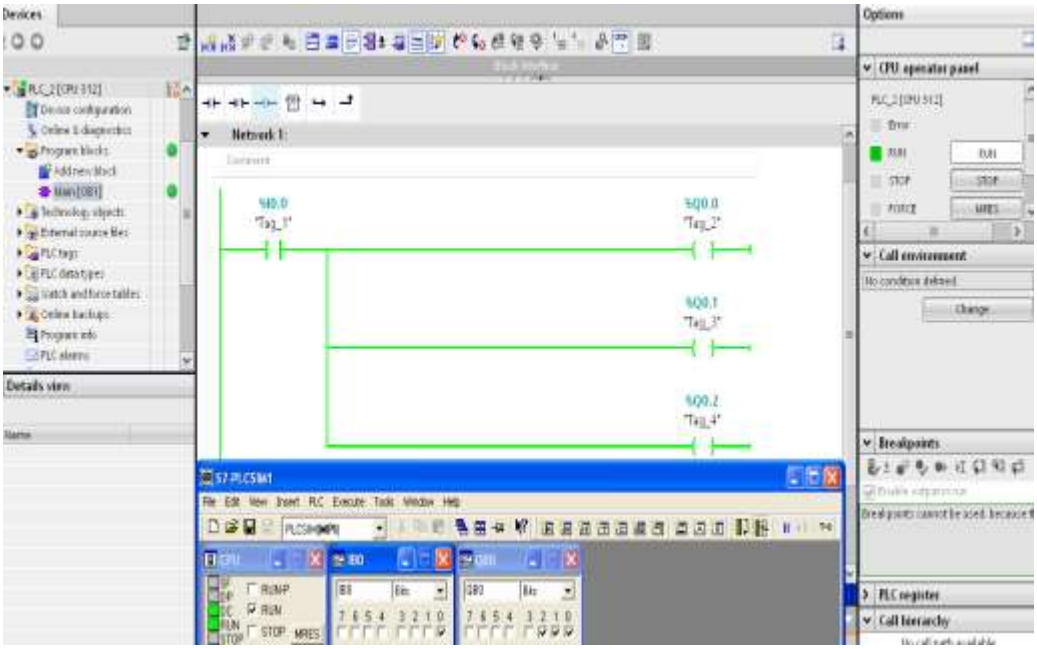
Course Duration : **1 Month**

Intake Capacity : **50 Trainees**

Minimum Qualification Required for Admission : **B.E/B.Tech**

About Project

- ✓ We will offer project in the field of automation which includes PLC , VFD & Servo drives.
- ✓ We will also Hardware project involving only integration of hardware components.
- ✓ We will explain the theoretical background of project to trainees.



- ✓ Explanation of individual component of project.
- ✓ Imparting practical / Hands on training on project what they had selected.
- ✓ Explaining the Programming concepts of PLC.
- ✓ Giving Training to develop small application program in PLC .
- ✓ Ask the trainee to develop their own program for their project and we will guide in between if the trainee struck in middle of project.

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S/W-II DEPT.

Name of the Course : OFFICE AUTOMATION

Duration of the Course : 3 MONTHS

Intake Capacity : 5

Min Qualification required : Intermediate

Office automation refers to the varied computer machinery and software used to digitally create, collect, store, manipulate, and relay office information needed for accomplishing basic tasks. Raw data storage, electronic transfer, and the management of electronic business information comprise the basic activities of an office automation system. Office automation helps in optimizing or automating existing office procedures

TOPICS COVERED :

- What is Computer?
- Characteristics of Computer
- Desktop computers, Block diagram of a computer

  Input and Output devices, memory and storage devices
- Different ports and its uses, Different type of printer.
- Installation of Application Software, Windows OS, Printer, Scanner, Camera.
- Troubleshooting of Windows OS, Application Software.
- Hardware & Software Installation of Hardware & Software, Using Scanner.

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S/W-II DEPT.

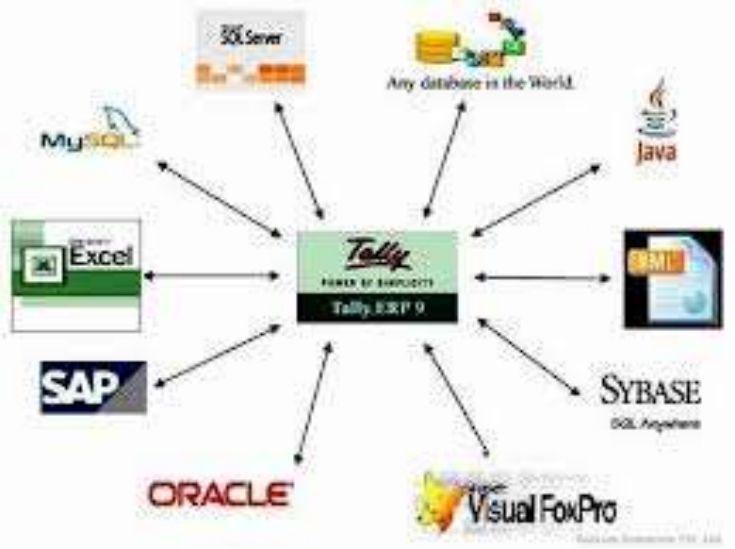
Name of the Course : TALLY

Duration of the Course : 45 DAYS

Intake capacity : 5

Min Qualification required : Intermediate

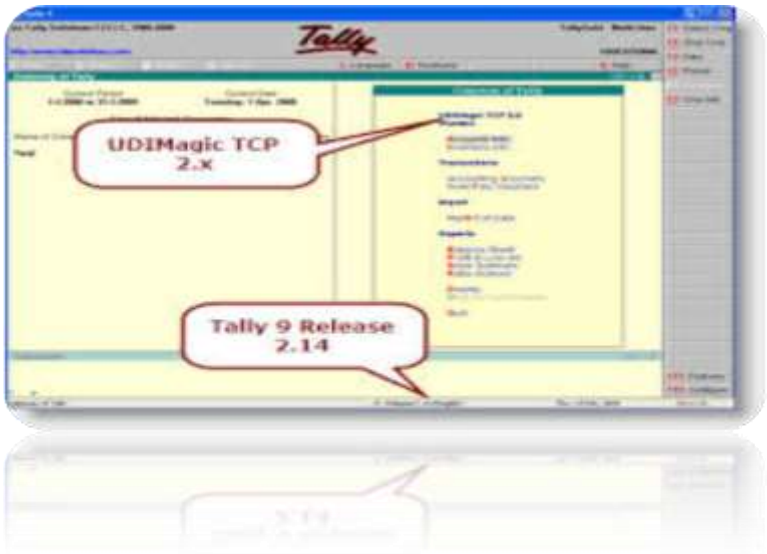
Tally's software is mainly used for vouchers, financial statements, and taxation in many industries, and has specialized packages for retail businesses. More advanced capabilities are found in its enterprise resource planning package.



TOPICS COVERED :

- Introduction, journals, Ledgers
- Accounting Entries
- Preparation of trading account

- Profit & loss account, Balance sheet
- Direct expenses & Indirect Expenses
- Posting of accounting entries into journals & ledgers
- Calculations of Depreciation on fixed assets, Creating a company
- Opening of ledgers, Stock groups, stock items
- Units of measure and ledger creation



USES OF TALLY COURSE

1.Do all basic accounting functions,

2. Manage your store and items,

3. Do the job costing,

4. Manage payroll,

5. Get many MIS reports which are useful for day today functions,

6. File your tax returns like prepare balance sheet, profit and loss statement, VAT forms,

TDS, returns, Service tax returns, e-TDS filing, Excise forms, FBT reports and forms,

7. Maintain budgets, scenarios,

8.Calculate interest on pending amount

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NTSC-HYD

S/W-II DEPT.

Name of the Course : ADVANCED EXCEL

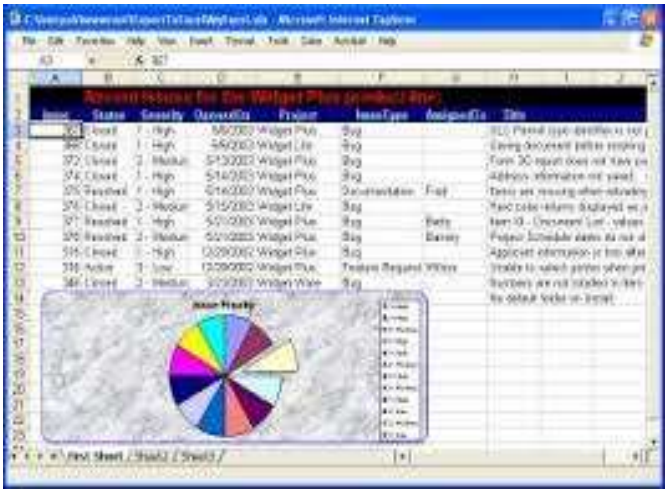
Duration of the Course : 1MONTH

Intake Capacity : 5

Min Qualification Required : Intermediate

Advanced make Excel smart. With out them, Excel is just a data keeping tool. But by using formulas, you can crunch data, analyze it and get answers to most complex questions. While anyone can use a simple SUM or IF formula, an advanced user of it would be able to seamlessly write & combine formulas like SUMIFS, SUMPRODUCT, INDEX, MATCH, LOOKUP formulas. Apart from knowing the formulas, advanced Excel users know how to debug them, audit them and how to use which formula for which occasion (and they also know few alternatives for any given formula problem).

TOPICS COVERED :



- Introduction, Font , Alignment settings, Number options
- Conditional formatting, and create tables
- Format as table, cell styles, sorting
- Insert, Delete, Format, find and replace options
- Table and pivot table
- Pivot charts, illustrations, Editing Options
- Charts, Hyperlink
- Text options, Page layout menu options

USES OF ADVANCE EXCEL COURSE

- Do all basic functions, & calculations
- Manage your store and items,
- Can prepare salary sheet

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NTSC-HYD

S/W-II DEPT.

Name of the Course : INDUSTRIAL TRAINING

Duration of the Course : 6 Months (4 months sw-2,2 months ELC)

Intake Capacity : 50

Min Qualification Required : Diploma

The main aim of this program is to impart industrial exposure to students perusing diploma in computer applications; we give this training as per the requirement of industries after this training program our trainees can work directly in any electronic industries in the area of technical stores , productions & maintenance, R&D , quality control and technical marketing

TOPICS COVERED

MICROSOFT OFFICE WORD

- Introduction, Home menu
- Insert menu ,Page layout menu
- references menu, Mailings menu
- Review menu and View Menu

MICROSOFT OFFICE EXCEL

- Introduction, Font , Alignment settings, Number options
- Conditional formatting, and create tables
- Format as table, cell styles, sorting
- Insert, Delete, Format, find and replace options
- Table and pivot table
- Pivot charts, illustrations, Editing Options
- Charts, Hyperlink
- Text options, Page layout menu options
- Simple formulas
- Formulas part-1

MICROSOFT OFFICE POWERPOINT

- Insert menu ,Design menu
- Animations menu and slideshow menu
- Review menu and View Menu

ADOBE PHOTOSHOP

- Introduction to Photoshop environment, Tools part-1
- Tools part-2, Text Tool, Introduction to Layers
- Edit Menu
- Image Modes, Select Menu
- Image Adjustments, Layer Styles
- New Fill Layers & Adjustment Layers
- Layer Mask, Clipping Mask, Vector Mask
- Define custom Shapes, Image size and canvas size
- Filters and Effects part-1
- Filters and Effects part-2
- View Menu, File Menu
- Options from Select Menu

ADOBE FLASH

- Introduction and Properties
- Tools part-1
- Tools part-2
- Shape And Motion Tween
- Filters

TALLY

- Introduction, Journals, Ledgers, vouchers
- Creating a company, opening of ledgers, stock items, units of measure
- Simple problems
- Returns problems
- Tax problems
- Depreciation problems
- Vat problems
-

DOT NET AND JAVA

- Syllabus depend as per the discussion with HOD with respective colleges
- Final Theory exam

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S/W-II DEPT.

Name of the Course : FOCUS & WINGS

Duration of the Course : 2 MONTHS

Intake Capacity : 5

Min Qualification Required : **I**ntermediate

A jet of ordinary liquid striking a flat plate will spread out in a circular sheet, but researchers were surprised to discover that so-called viscoelastic liquids form square or triangular sheets, among other shapes. This strange behavior originates at the impact region, where the liquid reduces internal stress by forming arches or "wings." These structures affect the outward fluid transport and may potentially be used to focus flow or optimize droplet formation in industrial situations.

Viscoelastic fluids, such as gels and pastes, respond to deformation in two ways—they yield to it and generate friction through viscosity, like honey; but they also "spring back" through elasticity, like a rubbery solid. The elasticity comes from long-chain molecules (polymers) that can stretch like tiny springs as a result of fluid flow. Saliva, tree sap, adhesives, paint, and even rocket propellant, are viscoelastic.

One of the unique properties of viscoelastic liquids is that they

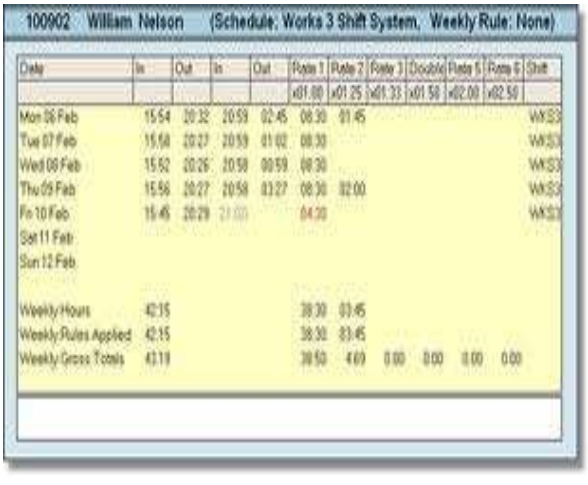
TOPICS COVERED :

Focus

- Introduction, journals, Ledgers
- Accounting Entries
- Preparation of trading account
- Profit & loss account, Balance sheet
- Direct expenses & Indirect Expenses
- Posting of accounting entries into journals & ledgers
- Calculations of Depreciation on fixed assets, Creating a company
- Opening of ledgers, Stock groups, stock items
- Units of measure and ledger creations

WINGS

- Simple problems
- Returns problems
- Tax problems
- Depreciation
- Adjustments
- Opening balances
- Vat
- Input vat, Output vat
- Purchase Vat, Sales vat
- TDS, TCS
- Excise duty
- Departments
- Non Trading
- Service tax
- Viva and Practical



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NTSC-HYD

S/W-II DEPT.

Name of the Course : MULTIMEDIA III

Duration of the Course : 45 DAYS

Intake Capacity : 5

Min Qualification Required : Intermediate

Multimedia refers to content that uses a combination of different content forms. This contrasts with media that use only rudimentary computer displays such as text-only or traditional forms of printed or hand-produced material. Multimedia includes a combination of text, audio, still images, animation, video, or interactivity content forms.

Multimedia is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices,

TOPICS COVERED :

- Max script
- Character studio scene
- Splines
- Import texture
- assignment/editing
- Constrained animation
- Skinning
- Integrated cloth
- Solver integration with Autodesk vault

USES OF 3DS MAX COURSE

- Polygon modeling
- NURBS or non-uniform rational B-spline
- Surface tool/editable patch object

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NTSC-HYD

S/W-II DEPT.

Name of the Course : Multimedia-I

Duration of the Course : **45** DAYS

Intake Capacity : 5

Min Qualification Required : Intermediate

Multimedia is usually recorded and played, displayed, or accessed by information content processing devices, such as computerized and electronic devices

TOPICS COVERED :

ADOBE PHOTOSHOP

- Introduction to Photoshop environment, Tools part-1
- Tools part-2, Text Tool, Introduction to Layers
- Edit Menu
- Image Modes, Select Menu

- Image Adjustments, Layer Styles
- New Fill Layers & Adjustment Layers
- Layer Mask, Clipping Mask, Vector Mask
- Define custom Shapes, Image size and canvas size
- Filters and Effects part-1
- Filters and Effects part-2
- View Menu, File Menu
- Options from Select Menu

CORELDRAW

- Introduction, Tools part-1
- Tools part-2, Layout Menu
- Text Menu, Edit Menu
- Arrange Menu part-1
- Arrange Menu part-2

ADOBE FLASH

- Introduction and Properties
- Tools part-1
- Tools part-2

NTSC-HYD

S/W-II DEPT.

Name of the Course : WIN XP & OFFICE XP

Duration of the Course : 2 MONTHS

Intake Capacity : 5

Min Qualification Required : S.S.C

TOPICS COVERED :

- What is Computer?
- Characteristics of Computer
- Desktop computers, Block diagram of a computer

  Input and Output devices, memory and storage devices

- Different ports and its uses, Different type of printer.
- Installation of Application Software, Windows OS, Printer, Scanner, Camera.

Troubleshooting of Windows OS, Application Software

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S/W-II DEPT.

Name of the Course : MAIN PROJECT

Duration of the Course : **45 DAYS**

Intake Capacity : 50

Min Qualification Required : MBA/PGDM PURSUING

TOPICS COVERED

- Theory Classes will be conducted based on Project selected by the Candidate/Batch

-WEEK-1

- Practical Classes will be Conducted on Based on the Project selected by Candidate/Batch

-WEEK-2

- Preparation of the analysis using statistical tools on the system

-WEEK-3 &4

- Guidence to prepare the Records/graphs/Interpretations/References. Etc

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S/W-II DEPT.

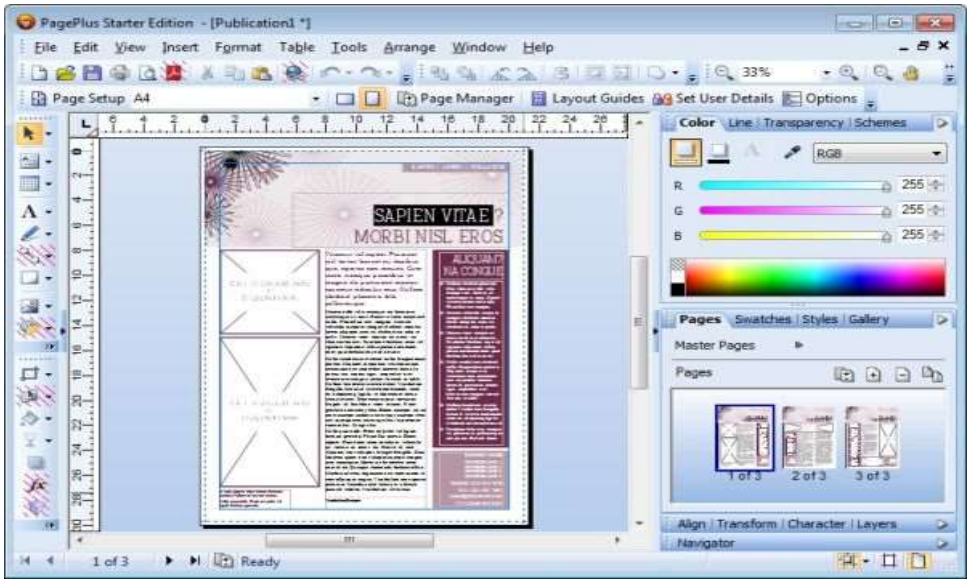
Name of the Course : DTP

Duration of the Course : 2 MONTHS

Intake Capacity : 5

Min Qualification Required : S.S.C

Desktop publishing (abbreviated **DTP**) is the creation of documents using page layout skills on a personal computer. Desktop publishing software can generate layouts and produce typographic quality text and images comparable to traditional typography and printing. This technology allows individuals, businesses, and other organizations to self-publish a wide range of printed matter. Desktop publishing is also the main reference for digital typography. When used skillfully, desktop publishing allows the user to produce a wide variety of materials, frommenus to magazines and books, without the expense of commercial printing.



TOPICS COVERED :

ADOBE PHOTOSHOP

- Introduction to Photoshop environment, Tools part-1
- Tools part-2, Text Tool, Introduction to Layers
- Edit Menu
- Image Modes, Select Menu
- Image Adjustments, Layer Styles
- New Fill Layers & Adjustment Layers
- Layer Mask, Clipping Mask, Vector Mask
- Define custom Shapes, Image size and canvas size
- Filters and Effects part-1
- Filters and Effects part-2
- View Menu, File Menu
- Options from Select Menu

CORELDRAW

- Introduction, Tools part-1
- Tools part-2, Layout Menu
- Text Menu, Edit Menu
- Arrange Menu part-1
- Arrange Menu part-2