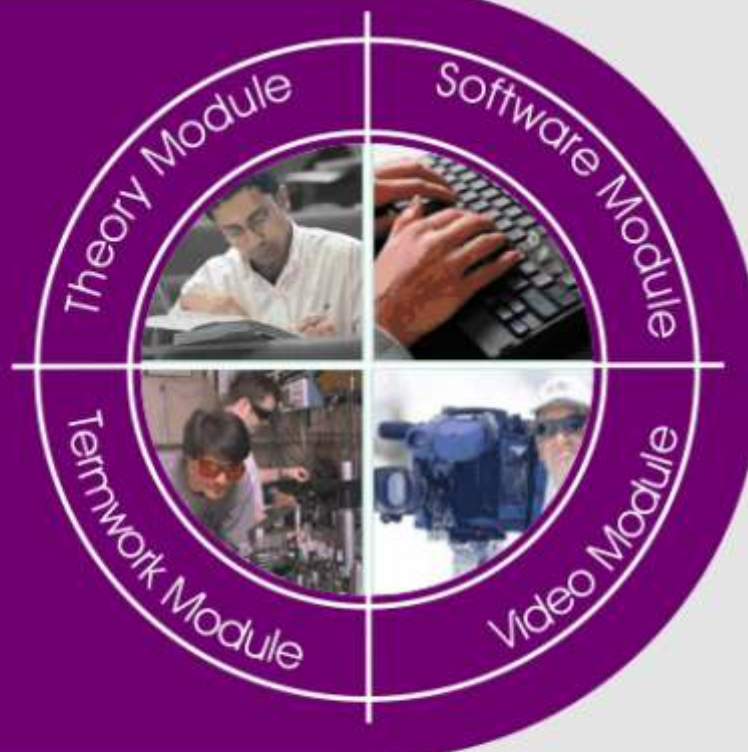


# Computer Aided Instructions & Learning Resources

## In Subjects of Mechanical & Electronics Engineering with Simulation

First in INDIA to bring **REVOLUTION IN ENGINEERING EDUCATION & TRAINING**

**CAI and LRs**



### Benefits of Computer Based Education & Training

- Single tool to bring Institute, teacher and student together with equal contribution.
- Audio visual aids demonstrate the practical aspects at the time of learning.
- Bringing change in the mind set to think of further improvements in education.
- Packages developed with latest tools and techniques offering the necessary ease of use while understanding complex engineering processes.



**SoftTech**  
ENGINEERS PVT.LTD.

AN ISO 9001:2000 CERTIFIED COMPANY

*e-Learning Solution Company*

**SoftTech Engineers Pvt. Ltd.** Pune Introduces, First time in INDIA, the New Educational System in Engineering in the form of Computer Aided Learning Resources.



## Theory Module



- **Theory** : Complete theory in the form of points for easy process of learning.
- **Animations**: For easy understanding of concepts and procedures.
- **3D Models**: To understand the real life model.
- **Page wise Notes Facility**: Create your own notes as per your requirements.
- **Sketches**: For better visualization of topics.
- **Voice Recording Facility**: Add your own voice and personalize the learning.

## Software Module

Calculation programs to provide Instant solution for numericals and faster way to analyze with various values. Professor can teach various types of problems with different values in the class very easily.



## Video Module



Visual Aids on various topics for Practical visualization of the topics. Video Clips of laboratory & sites are available in the module to demonstrate application of various instruments in class, while teaching.

## Termwork Module

Interactive knowledge tests covering subjective questions, objective questions with random selection, numerical assignments, video assignments and drawing assignments.



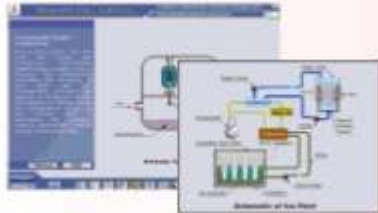
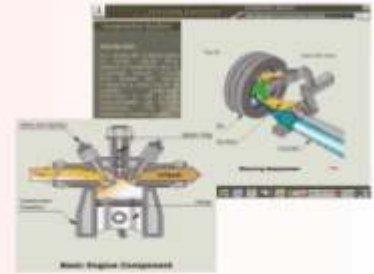
# Subjects of Mechanical Engineering

## Automobile Engineering

**Automobile Engines :** Engine Principles and Fundamentals

- \* Constructional Features of Automobile Engine Components
- \* Engine Cooling System Theory \* Lubrication Systems\* Fuel Systems \* Ignition Systems

**Automobile Chassis :** Transmission Systems \* Automotive Chassis \* Suspension Systems\* Wheels and Brake Systems

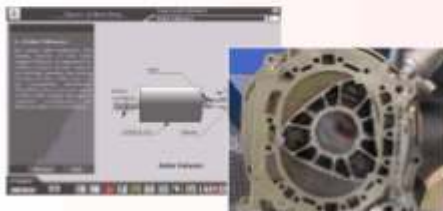
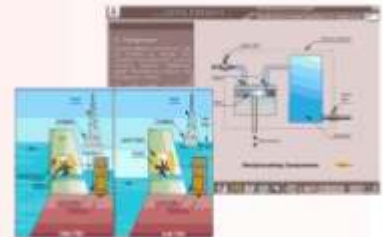


## Refrigeration and Air Conditioning

Introduction to refrigeration \* Refrigeration Cycles\* Vapour Absorption System \* Refrigerants \* Vapour Compression System Components \* Air Conditioning and Psychrometry \* Principles of Load Estimation \* Air Distribution System \* Insulation \* Air Conditioning System

## Thermal Engineering

Sources of Energies \* Fundamental Concepts and Laws of Thermodynamics \* Ideal Gases\* Steam and Steam Boilers \* Steam Turbines and Condensers \* I. C. Engine and Testing \* Gas Turbine \* Air Compressor \* Principles of Refrigeration \* Power Generation Systems



## Theory of Machines

Fundamentals \* Types of Mechanisms \* Study of Some Common Mechanisms \* Velocity and Acceleration in Mechanisms \* Cams and Followers \* Power Transmission Devices \* Flywheels and Governors \* Brakes and Dynamometers \* Friction and Clutches

## Engineering Drawing

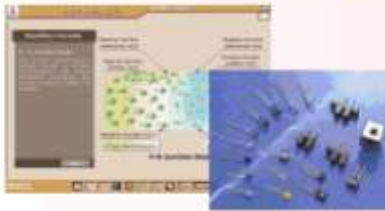
- \* Lines, Lettering, Dimensions & Scales \* Orthographic Projections & Isometric Projections \* Interpretation of Given Views \* Curves Used, Engineering Practice & Loci of Points
- \* Projection of Points, Lines, Planes and Solids \* Intersection of Surface of Solids, Section of Solids\* Computer Aided Drawing



## Engineering Mechanics

**Statics-** \* Introduction: Various axioms related to mechanics  
\* Analysis of bodies in equilibrium \* Equilibrium of force systems involving frictional forces \* Engineering application of two force and multi force members \* Force systems in space  
**Dynamics-** \* Kinematics of a particle \* Kinetics of particles  
\* Kinematics of rigid bodies \* Kinetics of rigid bodies

# Subjects of Electronics Engineering



## Electronics Devices & Circuits

Introduction to electronics \* Semiconductor theory  
Rectifier circuit \* Filter circuit \* Zener Diode & its applications \* Bipolar junction diode & Field effect transistor \* Transistor amplifiers \* Transistor AF power amplifier.

## Digital Techniques & Applications

Number System and Boolean Algebra \* Basic Logic Gates \* Logic Families and IC specification \* Multiplexers- De-multiplexer, Encoder-Decoder \* Flip Flops, Counters and Registers \* A/D and D/A Converters \* Computer fundamentals



## Electronics Measuring Instruments

\* Fundamentals \* Measuring parameters \* Units of measurement and instruments \* Frequency and time measurement \* Oscilloscope \* Generators \* Wave analyzers \* Digital instruments \* Transducers \* High frequency measurement



## Microprocessor and Microcontroller

\* Microprocessor Systems Theory \* The 8085 Microprocessor Theory \* The 8085 Instructions and Programming \* Timing Diagrams \* Stacks & Subroutines \* Memory Interfacing \* Interrupts \* I/O data transfer techniques & peripherals \* Micro controller 8051 \* Memory and Interfacing Theory of 8051 \* Study of 8051 and derivatives



## Communication Systems

\* Introduction to electronic communication system  
\* Transmission Media \* Wave Propagation \* Optical Fiber Cable \* Amplitude Modulation \* Frequency Modulation \* Pulse Modulation \* Television System \* Satellite Communication System \* Fiber Optic Communication System  
\* Data Communication Systems \* Cellular Mobile and Facsimile Communication Systems



## Electronics Materials and Components

\* Conducting, Insulating \* Semiconductor materials \* Magnetic materials \* Fixed variable and non linear resistors & capacitors  
\* Connections and wires \* Inductor and transformer \* Relays and displays \* Microphones, speakers and batteries \* Integrated circuits and surface mount devices \* PCB



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