

Andro Engine

Objective: The workshop is on "Andro-Engine" which will comprise of various sessions. The workshop is a combination of various branches like Mechanical Engineering, Electronics and Communication Engineering, Chemical Engineering, Computer Science Engineering and Information Technology.

In the workshop the automobile engine will be controlled by an Android Phone using a developer base and Arduino microcontroller moreover two 4 stroke engines will be overhaul.

2 cylinder 4 stroke Engine

3 cylinder 4 stroke Engine

This workshop will be first time held in India, no other institution or any research organization ever conducted a workshop on this topic. It's a new technology which might be in vast and commercial use in near future. Instead of a key an application file (mobile app) will be used to ignite the engine.

Introduction

Automobile

- What is an automobile?
- Brief history.
- Changes over the years.
- Indian automobile industry.

Engine??

Classification of Engine - C.I. and I.C. engine

IC Engine

Classification of IC Engine on the basis of-

- Application
- Basic Engine Design
- Operating Cycle
- Working Cycle
- Valve/Port Design and Location
- Fuel
- Mixture Preparation
- Ignition

- Stratification of Charge
- Combustion Chamber Design
- Method of Load Control
- Cooling

Fuel Supply System

- Fuel Filter
- Carburettor
- Fuel Injector
- Spark Plug

Ignition System

- Battery-Ignition System
- Magneto-Ignition System

Kick start

Self-start

Technologies

- PGMFi
- MPFi
- CRDi
- VVTi
- DTS-Fi
- VTEC
- Nitrous, etc.

Introduction to Embedded System

- Introduction to Embedded System
- Applications & Scope of Embedded System in various industries

Introduction to Open Source platform

- An Overview of Open Hardware
- Arduino Board Description

Introduction to Microcontroller

This session would deal with the basics of Microcontroller. The focus will be on the AVR Micro controller, which is one of the most powerful and widely used 8 bit microcontrollers.

- What is Microcontroller?
- Difference between Microcontroller and Microprocessor
- How can we use microcontroller in our circuits

Introduction to software tool chain

- Software Installation
- Getting started with the Arduino IDE to start writing your first program

Interfacing of I/O devices

LEDs

- Types of LEDs.
- How LEDs works?
- Interfacing of LED with Arduino

Relay

- Types of Relay
- Their Functions
- Interfacing of Relay with Arduino

Bluetooth

- Description of Bluetooth
- Bluetooth in android mobile
- Interfacing with Arduino

Live Project

- LED Controlling using Microcontroller
- Relay On/Off
- Controlling Spark plug Current/Voltage
- Bluetooth App Installation on Android mobile
- Controlling LED using Mobile
- Controlling Relay using Mobile
- Manual Start/Stop Engine
- Start Engine using Mobile
- Stop Engine using Mobile

Block all circuit Connections of Engine using mobile.