RoboKart

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Quadcopter

RC Drone Workshop

ROBOKART.COM again comes up with a new idea to encourage students on very interesting and upcoming topic of Quad copter. It is basically to clear a concept of how an aero model flies. To get into much deeper of aero model this course will teach you how to start building an quad copter, what all constitutes to make an quad copter. In this course we will concentrate on all aspects of electronics, mechanics, programming and communication.

A quadcopter, also called a quadrotor helicopter or quadrotor,[1] is a multirotor helicopter that is lifted and propelled by four rotors. Quadcopters are classified as rotorcraft, as opposed to fixed-wing aircraft, because their lift is generated by a set of rotors (vertically oriented propellers).This workshop teaches about designing of quadcopter as well as assembly of RC drone . This workshop includes controlling of controlling of Drone using flight control board which includes Assembly and calibration of Flight Control board.

What will you learn after attending this Workshop:

- Introduction to Controllers (ARDUINO & KK MULTICOPTER BOARD 2.1.5)and Embedded Systems Design.
- Working Principle of Quadcopter.
- Construction of Quadcopter drone
- Connection consideration of various configurations
- Introduction to Android App controlled Quadcopter
- Stability criteria for flying of drone
- Flying precautions

Workshop Benefits and & Highlights:

- ✓ Learn & Interact with Engineer Trainer & get to know about Arduino, Bluetooth module & All.
- ✓ Receive an unparalleled education on the art of building robots & applications with personal one – on – one attention.
- ✓ Learn to make your own robot within 2 days.
- ✓ PowerPoint Presentation, Live Demos, Interactive Questions & Answer session & comprehensive material.

- Session 1:
  - Introduction to Flying Drones
  - Discussion about Tri copter, Quadcopter, Hexa copter
  - Working Principle of Quadcopter.
  - Constituents required for Drones
    - ✓ Flight control board
    - ✓ Electronic Speed Controller
    - ✓ Q450 Frame
    - ✓ BLDC Motors
    - ✓ RF Remote
    - ✓ Propeller
  - Kit Distribution & Introduction to kit contents
- Session 2:
  - Introduction to Arduino Microcontroller
  - Installation of Arduino IDE
  - Programming for Motor control
  - Programming for Motor Speed Control
  - Working of Motor driver with Microcontroller

- Session 3:
  - Constructional Concepts Quadcopter Frame.
  - Assembly and Constuction of quadcopter
  - Connection consideration of various configurations
  - Operation of Gyroscopes Microcontroller KK2.1.5

- Session 4:
  - Calibration of KK Flight control board
  - Motor Testing with Remote
  - Android App/ RF Remote Testing with Quadcopter
  - Group wise Flying session

Certification:

Certification will be provided from RoboKart.com.

E-Certificate will be available to download at our website.

Target Audience:

- ✓ Students seeking career in Robotics and Embedded System related Industry.
- ✓ All year students from Physics, Electronics, EXTC, Mech, IT, EEE, IE, CS Engineering Stream & Android Enthusiast.

Kit Content:

- KK Flight Control Board
- Arduino Nano Board
- Prpgrammer Cable
- Q450 quad Frame
- 1400KV BLDC Motors
- 10*4.5 Propeller set
- RF Remote controller
- Electronic speed controller
- Motor Driver L293D Module
- Potentiometer
- BO DC Motor
- BO Wheel
- Jumper wires
- Battery Snapper
- 9V DC battery
- Screw Set
- Screw driver

Note: Day 1: Students will work in a group of 5 students.
Day 2: Students will work in a group of 10 students.