



Quadcopter

RC Drone Workshop



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 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

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
- > Programmer 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 student.

Faculty coordinator:

Mr. Gautham.B

Assistant Professor

Department of EIE.

Student coordinators:

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