Introduction

This workshop has been designed by engineers and professionals with over five years of experience in the field. Our team consists of engineers from Aerospace, Mechanical, Electrical and chemical Engineering.

The workshop will house 9 sessions as given in the course content tab. In this workshop you will learn applications based Design, Manufacturing, Tuning and Flying spanning over 2 day at IIST, Thiruvananthapuram. The main target of the workshop is to establish the base which will help you to independently design, build and fly a Tricopter. The course will give you deep knowledge about the concepts of Aerospace Engineering like control and stability of Tricopter along with the introduction to rotor dynamics.

The participants will be able to take part in national and international technical festivals. Participants will get a chance to join Summer Industrial Internship at TechEagle.

Course Content: RC TriCopter Drone Workshop

Day1

Introduction to DRONE/UAV Industry

- Industry insights
- Applications of DRONEs/UAVs
- Type of DRONEs/UAVs
- Future aspects of Industry
- Rules & Regulations in India

Theoretical Design Session

- Fundamentals of Rotor Dynamics.
- Various components of a TriCopter Drone.
- Stability and Control of a TriCopter Drone.
- Application Based TriCopter Designing
- Study of Materials

Hands-On Manufacturing Session

- Manufacture TriCopter from raw materials based on the Design (Cutting, Drilling etc.)
- Quality check and procedure for fine manufacturing
- Learn best manufacturing techniques by experienced Mentors.

Electronics Session (Detailed Study of)

- Motors
- ESCs
- Propeller design and mfg.
- Sensors (IMU, GPS, Barometer etc.)
- Batteries
- Flight Controller Board

Hands on Electronics Integration Session

- Logical integration of Electronics
- Torque balance mechanism integration
- Wiring and weigh balance

Day2

Virtual Flying Simulation Session

- RC Flight lessons to become professional pilots from TechEagle Pilots
- Individual Experience of flying an RC Tricopter in a Flight Simulator
- Flight tips from licensed pilots of TechEagle Pilots

PID Algorithm and Tuning

- Learn the algorithm to stabilize and control a DRONE
- Master the way to tune your DRONE perfectly
- Understand the Safety precautions
- Understand the coding of a DRONE

Real Ground Flying Session

- Making your RC Tricopter RTF (Ready to Fly) - Weight Balance, Pre Flight Checks.

- Hands-on learning of the PID Tuning
- Learn the professional way of Flying DRONEs
- Test Flight of All DRONEs
- Get Live Video feed to your Smartphone
- Safety Precaution while conducting Flying Session

Felicitation Ceremony

- Best Fabrication Award to winning team
- Participation certificate with Unique ID
- Live Feedback, Q&A session
- Future opportunities in DRONE industry
- How to make career in the emerging industry

FAQs

1. What are the workshop hours?
   Ans: 9Am-6PM on both days

2. Who can attend the workshop?
   Ans: Any enthusiast person who wants to learn something new can attend it. This workshop is beneficial for all engineering departments (ME, CS, Civil, EE, ChE, MSE, etc.).
   If someone is not from B.Tech but has good grasp over basic physics, can join the workshop.

3. Perquisite to join the workshop?
   Ans: No perquisite.

4. Benefits of the workshop?
   a. Best Fabrication Award to one Team
   b. Participation certificate with unique ID
   c. Hands-on experience on Designing, Simulation, Manufacturing and simulation flying.
   d. Manufactured TriCopter Frame
   e. Continuous technical support from TechEagle team

f. 10% Flat discount in the Summer UAV/Drone Industrial training & Internship 2018.
g. Exposure to new technology and Industry

5. Do I need to bring a Laptop?
   Ans: No need to bring a Laptop for the workshop purpose. Wherever, you will need one it will be provided by our team.

6. Will everyone get a participation certificate?
   Ans: Yes, if one has attended all the sessions of the workshop.

7. Will we get electronics in take away kit?
   Ans: No, How to choose and purchase electronics will be explained in the workshop.

8. Will you teach us the applications of Drones?
   Ans: Yes

