UAV & Quadcopter

(Summer Training Program)

4 Weeks/30 Days

"PRESENTED BY"

RoboSpecies™

Explore > Innovate > Enjoy Technologies Pvt. Ltd.

An ISO 9001 : 2008 Certified Company

Accredited by:

INTERNATIONAL ACCREDITATION ORGANIZATION
HOUSTON U.S.A.

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SUMMER TRAINING PROGRAM
UAV & QUADCOPTER

Course Name : UAV & Quadcopter
Certification : By RoboSpecies Technologies Pvt. Ltd. Accredited by International Accreditation Organization, Houston, U.S.A.
Study Material : Books & CDs Free to each participant
Robotics Toolkit : Free to Each Participant

Fees & Duration

1. For UAV & Quadcopter **(Advance)**
   Fees : ₹ 7990/- per candidate
   Duration : 30 Days/4 Weeks

Quadcopter Advance Module	
Days	**Topics**
Day 1	• Introduction to Aerodynamics • What is pressure-velocity relation? • Introduction to Thermodynamics • Application and is uses in growing world.
Day 2	• What are Drones? • Explanations of UAVs • Application of Drones in various sectors • Introduction to Quadcopter
Day 3	• Learning Basic electronics over breadboard • Learning Analog and Digital I/O • What are PWM signals?
Day 4	Project
Day 5	• Motor Control through programming • How to control RPM of motors through PWM • Learning concept behind Motor Driver Shield
Day 6	Project
Day 7	Project
Day 8	• Mechanics used in making Quadcopter • Thrust generation relation with motor RPM is explained • Balancing and Design of Quadcopter is elaborated

Day 9	• Design of any flying objects • What is theory behind Multi copter? • Why Quadcopter is most preferable.
Day 10	• Principle of Motors • How Brushless Motor Works? • What is the difference between common DC motors vs BLDC • Types of BLDC motors and its applications.
Day 11	• ESC(Electronic Speed Controller) • How ESC works? • What exactly it functions in any drone circuit? • Learning current and voltage rating.
Day 12	• Frames • Types of Frames • Importance of Frames • Properties of material
Day 13	• Battery Selection • **LI-PO**(lithium polymer battery)**NI-CD**(Nickel Cadmium Battery)
Day 14	Project
Day 15	Project
Day 16	• Concepts of artificial intelligence. • Microcontrollers and Microprocessor difference • Introduction to embedded system • Video sessions on advancements in Technology • Concepts of hardware and software interface • Different types of Sensors • Accelerometer • Gyro • Barometer • Different Microcontroller Boards • Different types of controllers
Day 17	Introduction to Propellers • Propellers demystified • Different types and sizes of propellers • Propellers used for Quadrotors

	• Propellers with BLDC Motors • Propeller Balancing
Day 18	Introduction to KK 2.0 Quadcopter Controller Board • KK 2.0 Controller Board Explanation • Different Controller boards • Connections of ESC to KK 2.0 • Calibration in KK 2.0 • Safe and Armed mode explained • Self-Level Mode Explained • Tx-Rx Calibration with KK 2.0
Day 19	PRACTICAL
Day 20	PRACTICAL
Day 21	Introduction to 2.4Ghz TX RX • Transmitter used for Quadrotors • TX Rx Explained • Tx Rx connections with Controller Board • Checking null factor • Proper calibration
Day 22	• Final Calibrations and Testing • Weight Calibration • Center of Gravity checking • Checking connections • Selecting proper modes for flight • Safety Precautions
Day 23	PRACTICAL
Day 25	PRACTICAL
Day 26	Completing Project Report Day 1
Day 27	Completing Project Report Day 2
Day 28	Discussion over other projects and Competition

Day 29	Project Submission
Day 30	Doubt Discussion cum farewell

Why UAV & Quadcopter Training from RoboSpecies Technologies?

1. **Lot of Major Projects** will be covered in this training.
   - 20+20 Projects are covered in BASIC Module
   - 20+20+20 Project are covered in ADVANCE Module
   - 9 optional major projects.
2. Our syllabus is professionally designed to cover **Basic** as well as **Advance** aspects of Embedded Systems & Robotics
3. Each day of our training is well planned to provide you the **Theoretical** as well as **Practical** Knowledge of the module
4. Each day will come up with **New Practical's** & **Projects** which makes the training interesting and exciting.
5. Time to time **Practical Assignments** will be provided to the students, which will help them in doing practice at home.
6. **Revision Time** & **Query Sessions** are provided to the students which help them in clearing their all previous doubts.
7. **Exam** will be conducted at the end of **basic** as well as **Advance** module to test the knowledge level of the students.
8. Time for **Project Work** will be provided to the students, in which students will develop a project of their own choice. This will encourage **Innovative Ideas** among students.

Pre-Requisites

1. Basic knowledge of C\C++ Programming.
2. Basics of Electronics.
3. Eagerness to learn new innovative things.

Who Could Attend this Training?

- Students from B.E/B.Tech/M.Tech/Diploma (ECE/EEE/CSE/IT/MECH) can join this training.
- Anyone who have interest in this field and have pre-requisite knowledge