

UAV & Quadcopter (Summer Training Program) 4 Weeks/30 Days

“PRESENTED BY”



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ACCREDITATION
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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	<ul style="list-style-type: none">• Introduction to Aerodynamics• What is pressure-velocity relation?• Introduction to Thermodynamics• Application and its uses in growing world.
Day 2	<ul style="list-style-type: none">• What are Drones?• Explanations of UAVs• Application of Drones in various sectors• Introduction to Quadcopter
Day 3	<ul style="list-style-type: none">• Learning Basic electronics over breadboard• Learning Analog and Digital I/O• What are PWM signals?
Day 4	Project
Day 5	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Mechanics used in making Quadcopter• Thrust generation relation with motor RPM is explained• Balancing and Design of Quadcopter is elaborated

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Day 9	<ul style="list-style-type: none"> • Design of any flying objects • What is theory behind Multi copter? • Why Quadcopter is most preferable.
Day 10	<ul style="list-style-type: none"> • 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	<ul style="list-style-type: none"> • ESC(Electronic Speed Controller) • How ESC works? • What exactly it functions in any drone circuit? • Learning current and voltage rating.
Day 12	<ul style="list-style-type: none"> • Frames • Types of Frames • Importance of Frames • Properties of material
Day 13	<ul style="list-style-type: none"> • Battery Selection • LI-PO(lithium polymer battery)NI-CD(Nickel Cadmium Battery)
Day 14	Project
Day 15	Project
Day 16	<ul style="list-style-type: none"> • 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 <ul style="list-style-type: none"> • Propellers demystified • Different types and sizes of propellers • Propellers used for Quadrotors

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	<ul style="list-style-type: none"> • Propellers with BLDC Motors • Propeller Balancing
Day 18	<p>Introduction to KK 2.0 Quadcopter Controller Board</p> <ul style="list-style-type: none"> • 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	<p>Introduction to 2.4Ghz TX RX</p> <ul style="list-style-type: none"> • Transmitter used for Quadrotors • TX Rx Explained • Tx Rx connections with Controller Board • Checking null factor • Proper calibration
Day 22	<ul style="list-style-type: none"> • 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

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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?

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- 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