RANCHO LABS

IHFC Technology Innovation Hub of IIT Delhi

DRONE
Winter camp

Future-Ready Learning,
Crafted by **IIT Delhi Alumni**













For Grade:

6th to 12th





Unlock the Sky with Innovation
Turn Your **Curiosity** into **Creation** this Winter

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Who we are?

We reimagine how children learn, making it hands on, engaging, and real-world exploration based. Guided by an ethos to build a better future with experiential learning in a better way, **Rancho Labs was founded** by **IIT Delhi Alumni** to bring education in **AI**, **Coding**, **Robotics**, and **innovation** to life.

Incubated at IHFC, IIT Delhi, and trusted by over **25000+ parents worldwide**, we're empowering innovators with future-ready skills. We have come a long way, but we're only getting started.

4.9/5
Average Rating by Parents

10 +
Research Papers Written

700 +
Innovations Projects

50 +
Competition Winners





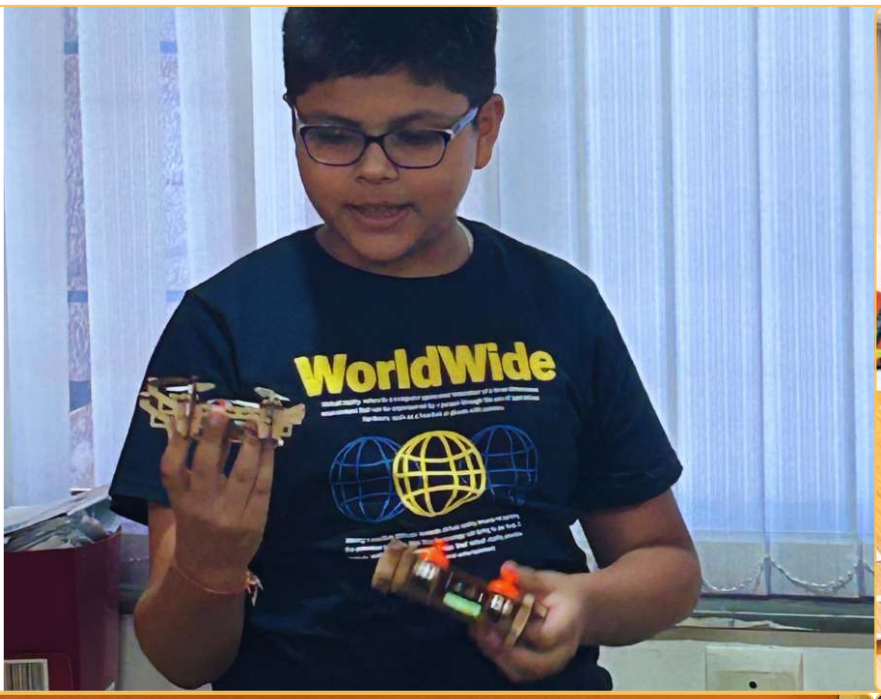


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About the Program

In this program, students explore the world of flight through hands-on projects. From building paper airplanes to **3D printing** drone frames, they learn key concepts of **aerodynamics**, **drone mechanics,** and **flight testing**—culminating in a thrilling drone racing challenge.









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Learning Outcomes

- Understand basic principles of **aerodynamics** and **drone flights.**
- Learn to **design**, **build**, and **fly** different types of drones.
- Develop skills in **3D design**, **CAD tools**, and **slicing software**
- Strengthen **creativity**, **problem-solving**, and **engineering thinking**.
- Learn **drone control**, **stabilization**, and **maneuvering techniques** for precision flying.



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Camp Schedule

(2 hours each)

Session 1

Introduction to Drones

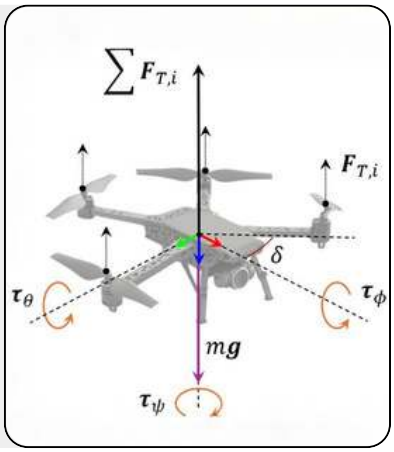
- What even is a drone? Real-world applications
- Types of aircraft: rotor-based, fixed-wing & hybrid
- Properties & trade-offs of each type
- Laws of physics, airfoils & aerodynamics
- Exploring a wind tunnel.



Session 2

Concepts of Aviation

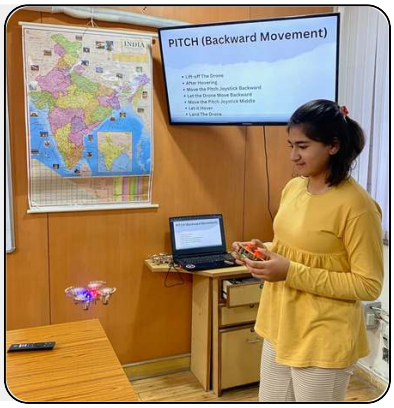
- Degrees of freedom: surge, sway & heave
- Forces acting on aircraft
- Lift & thrust in rotor-based and fixed-wing aircraft
- Rotational motion: roll, pitch & yaw
- Torques & control systems in aircraft.



Session 3

Aerodynamics

- Introduction to 3D designing
- Working with & combining basic 3D shapes
- Designing your own aircraft
- Testing it in a wind-tunnel simulator.



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Camp Schedule

(2 hours each)

Session 4

Drone Flight

- Understanding the controls
- Flying a drone in a simulator
- Flying a real drone
- Flight rules & safety guidelines.



Session 5

Drone Assembly

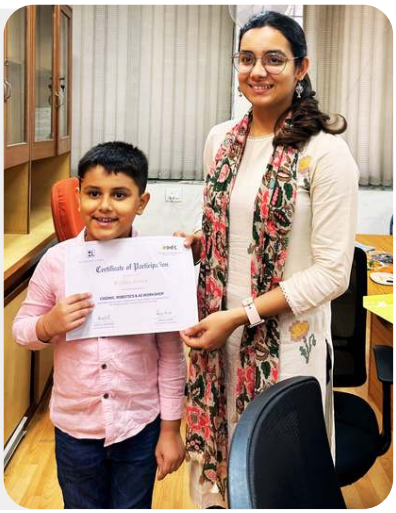
- Parts of a drone
- Role of each part
- Step-by-step drone assembly
- Testing your assembled drone.



Session 6

Convocation & Project Showcase

- Demonstrating drone & aviation skills
- Explaining how a drone and its components work
- Sharing challenges faced and lessons learned
- Certificate distribution ceremony.



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Certificate of Completion



Certification by **Rancho Labs** &
Technology Innovation Hub of IIT Delhi



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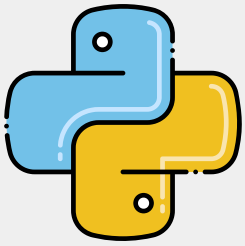
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Discover more Programs



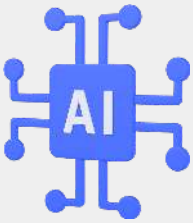
Game Development Winter Camp

For Grade 2- 5 | 6- 12



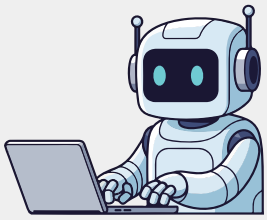
Python Programming Winter Camp

For Grade 6-12



AI winter camp

For Grade 6-12



Robotics winter camp

For Grade 2- 5 | 6- 12

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Locations & Fee Structure

1. Offline Centres

Visit our state-of-the-art innovation labs for an immersive, hands-on experience:



Head Office(IIT Delhi):

Rancho Labs, 1st Floor, Vishwakarma Bhawan, IIT Delhi, New Delhi - 110016

Offline Learning Centres:

- Gurugram Center: DLF Phase-1
- Noida: Spectrum Metro Mall, Phase-1, Sector 75
- Vasant kunj

2. Fee Structure

Offline Fee: ~~Rs.17,000/-~~ **Rs.15,000/-**



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Proof of Excellence

Rancho Labs has been an incredible learning partner for my son, Bhavik, over the past two years. Their structured approach to teaching coding and AI has not only strengthened his technical skills but also helped him develop logical thinking and a problem-solving mindset. The emphasis on design engineering and real-world applications has given him a strong foundation for the future. We truly appreciate their dedication to nurturing young minds and making learning both engaging and impactful. Thank you, Rancho Labs, for inspiring and empowering the next generation of innovators!



Puneet Arora & Payal Madan Arora

Parents of **Bhavik Arora**

CEO @Advolt Pvt Ltd
CEO@Gofitness



Aabir is very fond of his Robotics class and he enjoys his time at Rancho Labs and always excited to come to the class to learn new challenging projects. Rancho Labs and their faculty has raised the bar for many such communities/institutions by providing first hand experience/practical exposure to kids. Encouraging the kids to think out of the box and solve daily challenges has actually made my kid even more smarter and a great problem solver. Truly appreciate the hard work that goes in the background by the teachers to make that every session extremely enjoyable and rewarding for the students every time.



Indu Gupta

Mother of **Aabir**

Project Manager in Network Automation at Cisco

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Proof of Excellence

I am incredibly grateful to Rancho Labs and the entire team for providing such an engaging and inspiring robotics program for young minds. My daughter, Ivana Gupta, has truly enjoyed every session. The hands-on learning, the practical exposure, and the encouraging teaching style have sparked a genuine interest for technology in her.
It's been heartening to see her excitement after each class and the confidence she has gained.
Thank you for nurturing curiosity and laying such a strong foundation for the future.



Neha Gupta
Mother of **Ivana Gupta**

Director, PwC India

My son Rinawma, 12 years, is a special needs child. I am so happy to enroll him in Rancho Lab's Robotics class. He enjoys the classes by Dhananjay who's a gentle and patient teacher. I am impressed by the young and energetic staff that have guided us through the registration process and willing to lend a patient ear to all our queries. I am especially pleased that they allow for rescheduling of classes in case I, a working mother, cannot take him to class because of work commitments.



Kooki Ralte
Mother of **Rinawma Chawngthu**

Asst. Professor, Dept of English, PGDAV College, University of Delhi

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The Journey Begins Here

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