

Drone Racing Challenge

Fifth International Robo Tech Olympiad 2025

Organized by Robo Tech Valley & Uttara University

About

Drone racing is an electrifying competition where pilots control **high-speed, camera-equipped quadcopters** using **first-person view (FPV) headsets**, allowing them to experience the thrill of flight in real-time. Similar to full-scale air racing, the challenge is to navigate a **predetermined circuit** as quickly as possible, testing both speed and precision.

As part of the **Fifth International Robo Tech Olympiad 2025**, organized by **Robo Tech Valley and Uttara University**, this event will push the boundaries of **aerial maneuvering and real-time decision-making**. Competitors must navigate through a **complex indoor course**, relying solely on **onboard processing and sensing**, as external sensors are not permitted.

Despite the challenges, past teams have successfully utilized **waypoint tracking strategies and precise visual identification of multi-colored gates** to optimize their flight paths. With the **entire race environment pre-mapped**, competitors will have the opportunity to **showcase their expertise in high-speed drone navigation and advanced control systems**.

Eligibility

1. Participants must be **undergraduate, bachelor's, honors, diploma, or polytechnic, college or school students** with a valid institutional ID for verification.
2. Teams can consist of **1 to 3 members**.
3. Students from different institutions can form a team together.

Registration Details

- **Registration Fee:** BDT 1,500/- per team (Early Bird)

Arena Specifications

- Several **400mm x 400mm** boxes will be marked on the ground.
- Participants must take off from a designated box, navigate obstacles, and land in another box through a series of loops, bends, and underpasses.
- The course includes **pillars, loops, bends, and drop zones**, requiring high levels of control and maneuverability.

Drone Specifications

- The drone must fit within **400mm x 400mm x 300mm** dimensions.
- **Autopilot, sonar, GPS, or obstacle avoidance systems** are strictly prohibited. If detected, the team will be disqualified.
- The drone must be **fully manually controlled**.

- **Pre-built commercial drones** are not allowed; all teams must use custom-built quadcopters.
- Participants should bring **extra propellers and chargers** for their drones.

General Rules

- Each team has a maximum of **10 minutes** to complete the track.
- The timer starts once the countdown finishes and stops when the drone lands in the final landing zone.
- **Trial runs are not allowed** before the race.
- Misconduct or violation of rules may result in **disqualification**.
- The **judges' decision is final** in case of disputes.
- The organizing team reserves the right to **modify any rules** as necessary, with updates being communicated on the official event website.

Awards & Prizes

- **Champion: 20000 BDT**
- **Runner-Up: 10000 BDT**
- **2nd Runner-Up: 5000 BDT**