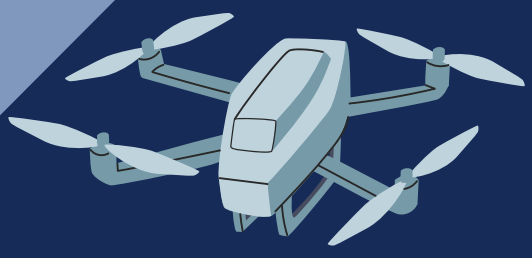
Geethanjali College of engineering and Technology

Sky Dash

Robotica' 25

RULE BOOK



1. Problem Statement

Design and build a manually controlled drone (quad-copter or tri-copter) capable of completing 3 laps of the event track by crossing all mandatory waypoints and the Sky Gate (finish line) in the correct manner.
The challenge emphasizes piloting precision, consistency across laps and safe operation. The ultimate goal is to achieve the lowest Final Net Time after applying all penalties.

2. Arena & Objective

The arena will include mandatory Waypoints and a Sky Gate, which serves as the lap counter and the finish line.

Objective: To complete all 3 laps and finish with the lowest Final Net Time.

3. Drone Specifications

1. The length of the propellers must not exceed 10 inches.
2. The diameter of the hoops in the arena is approximately 1 meter. Therefore, it is advised that the overall drone diameter should not exceed 50 cm to ensure smooth navigation.
3. The use of metal propellers is strictly prohibited.
4. The maximum battery weight allowed is 400 g.

4. Teams

1. Each team may consist of 1–3 members.
2. Members from different institutions are allowed to collaborate.
3. Only two members per team are permitted near the arena during a run.

5. Race Format & Judgment Criteria

5.1. Race Format

1. Each team races individually, one drone at a time.
2. Each run consists of 3 laps.
3. The Sky Gate acts as both the lap marker and the finish line. A lap is valid only when the drone crosses the Sky Gate in the correct direction and in the correct way as instructed by the organisers on the event day.
4. The raw time for each lap and the total time across 3 laps will be officially recorded.

5.2.Penalties

1. Border/arena boundary touch → a penalty will be applied.
2. Missed mandatory checkpoint or invalid Sky Gate crossing → a penalty will be applied.
3. If the drone crashes or stops working while crossing the boundary, the team may take time to repair it, but the repair time will be added to the final race finish time, and the crash will also incur a penalty.
4. If the repair takes too long, the team will be disqualified. They may re-register in the event with the same drone after fully repairing it.
5. Unsafe flying, ignoring marshal instructions, or endangering spectators → disqualification.
6. The exact penalty time values will be decided and declared by the organizers on the event day.

5.3.Incomplete Laps

1. All teams must attempt to complete 3 laps within their run.
2. If a drone fails to complete the 3rd lap, the team's time will include the laps completed plus an additional penalty for the missed lap, decided by the organizers on the event day.
3. If a drone is unable to complete even the 1st lap, the run will be recorded as Did Not Finish (DNF).

5.4.Final Net Time

1. Final Net Time = Raw Total Time + Penalties
2. Rankings will be determined by the lowest Final Net Time.
3. Tie-breaker order:
   - Lesser penalties gives the team an advantage of winning.

6. Disqualification

Grounds for disqualification include (but are not limited to):

1. Reckless or unsafe operation putting people or property at risk.
2. Attempting to alter arena equipment or results.
3. Use of restricted or banned components when rules prohibit them.
4. Repeated violation of marshals' instructions.

7. Contact Details

Nandini Midde +91 9490372356
Tripurna Dyuthi +91 8247637932