



SGT UNIVERSITY
Shree Guru Gobind Singh Tricentenary University





SYNERGY 2024

FACULTY OF ENGINEERING & TECHNOLOGY

with

Torque & Code Club

DRONE COMPETITION

 16TH OCT - 17TH OCT 2024 |  10:00 AM - 4:00 PM

VENUE: SPORTS GROUND, SGT UNIVERSITY

DRONE EVENTS:

1. Obstacle Course Challenge
2. Eye in the Sky
3. FPV Freestyle Competitions
4. Innovation Round

College/University category and School category prizes upto 1,52,000/- to be won.

Participation and winner certificates to be awarded.

Drone & Robotics Competition

The commencement of “SYNERGY 2024” will mark the return of Drone and Robotics competitions. It is proposed that TORQUE Club, FEAT, SGT University plans to organize a two-day Drone and Robotics competition along with the SYNERGY 2024 event. A brief introduction to the event is given below.

Drone Competition

Overview & Objective

Since drones are going to be a big part of our lives soon, we are planning to organize a two-day drone-based competition in our university, for schools and colleges to participate in. The contesting teams will participate in different events with their drones and the teams will be given marks for their drone performances. The events will be judged by a panel of highly qualified judges who will make judgement based on different parameters for different events.

NAME OF THE COMPETITION: The War of Wings 5.0

ORGANIZED BY: TORQUE & CODE Club, FEAT, SGTU

DATE: SYNERGY, 2024

VENUE: Sports Ground, SGT University

LAST DATE OF ONLINE REGISTRATION: 15th October 2024 (On the spot registration also allowed)

REGISTRATION FEE: Nil

EVENTS/ROUNDS:

Drone Race: A drone race which will be conducted in two phases:

i) FPV Freestyle Competitions

Perform freestyle aerial manoeuvres and tricks with drones, judged on creativity, difficulty, and execution.

ii) Obstacle Course Challenge

The restricted race will have the drones moving within constraints of predefined width and height and the drones which successfully manoeuvre the constraints will be the winners based on minimum time of completion.

iii) Eye in the Sky: It is a Drone photography/Videography contest which will be held in two parts.

a) Static photography (*for stationary objects*)

b) Dynamic photography (*for objects in motion*)

Demonstrate the capabilities of drones in capturing aerial views and performing tasks related to surveillance, reconnaissance, and environmental monitoring..

Evaluation Model:

The judges will give marks to each team for their performance and declare the winners. The quality and originality of photos and videos will be checked by experts and their verdict will decide the result. A predefined set of points will be awarded to top three performers only, in the event.

- iv) **Innovation:** The creativity and innovativeness would be measured from the perspective of structural and operational aspects of the model and its social impact. The evaluation for this would be based on presentation by the teams.

Final Result & Prizes:

The judges will give marks to each team for their performance in each event they participate and will take the sum of their marks in the end and declare the overall winners (i.e., winners across events). There will be three winning prizes for the three highest scoring teams and also few consolation prizes, which would also consist of certificates of appreciation for the winners.

- a) First prize...Rs 16,000/- (College category) & Rs Rs 16,000/- (School category)
- b) Second prize... Rs 12,000/- (College category) & Rs... Rs 12,000/- (School category)
- c) Third prize.... Rs 10,000/- (College category) & Rs Rs 10,000/- (School category)

Candidature of Participants

1. Must be a regular student of a recognized Institute/School by State/Central Educational Governing Body.
2. Team size: Maximum 3 members with valid I-Cards of their respective Institutions/Schools.

General Rules (Referred from IDRL and IDRA)

1. All pilots must attend a general safety briefing and sign the appropriate waivers.
2. All pilots must demonstrate basic piloting skills (including Line of Sight)
3. Pilots must show Fail Safe and Arming/Disarming of their drones while working at Registration Desk
4. All pilots must have an “ARMING” position switch or sequence on their radio.
5. Pilots must use Nano/Micro unmanned drone (MTOW up to 2kg, without any payload) at university premises as prescribed by DGCA(GoI).([DGCA Guidelines](#))
6. Pilots must have all equipment and airframes within the pilot pit area.
7. Pilots must carry additional battery backup for entire event with chargers while the charging points would be provided at our end.
8. Pilots should bring their own soldering rod and other equipment.
9. All frames must pass a safety and airworthiness inspection. Once the airframe has been checked and approved by University Drone Committee (UDC), it must not be modified or changed.
10. Pilots are allowed to bring their own launch pads to races.
11. Pilots can only use circular antenna on quads and the antenna must be in good condition.
12. Drone Specifications

Name	Measurement(Maximum)
Drone dimensions – hub-to-hub (diagonal)	360 mm
Drone height – from the base to the top of a GPS antenna	222 mm
Propeller – length	150 mm
Maximum Weight of drone as per DGCA	2 Kg
Control distance (maximum) – with supplied remote control	300 m
Altitude of operation	100 feet

Venue Rules

- Pilots must adhere to all rules within the competition venue, and will not fly in any other part of the venue unless it is a designated flight zone.
- Pilots must arrive at the venue with their complete setup at least 1 hour before the official race time and must be in complete READY-TO-GO state 15 mins before race time.

- Pilots will NOT be given any practice session during the 15 mins before race event starts.
- Pilots MUST NOT assume any change of event timings until it is officially announced by the organizers (UDC).
- Pilots must contain all equipment and airframes within the pilot pit area and must not solder, weld or cause any spark within the pit area. There will be established workbench areas for soldering, repairs and modifications.
- A charging station would be provided with power points.
- General charging of electronic devices including radios or any device with a self-contained power supply is permitted.
- All batteries must be stored in a LiPo-safe bag or in an approved, fire resistant container.

Judging Rules and Race Format

- All events and races will be governed by an appointed team of judges/organizers.
- All events and races will follow the general rules and regulations of the competition.
- Each event & race will be monitored by judges, cameras, timing/lap systems and volunteers to maintain fair and accurate competition.
- University Drone Committee reserves the right to take any disciplinary action in case of any dispute.

Note:

Participants can modify the kit according to their professional judgment. Participants are responsible for testing and ensuring the safety of their own configurations. They are also responsible for establishing the operating limits of those configurations.

Acronyms:

- IDRL: INDIAN DRONE RACING LEAGUE
- IDRA: INTERNATIONAL DRONE RACING ASSOCIATION
- DGCA: DIRECTOR GENERAL OF CIVIL AVIATION
- MTOW: MAXIMUM TAKE-OFF WEIGHT
- GPS: GLOBAL POSITIONING SYSTEM
- UDC: UNIVERSITY DRONE COMMITTEE

For any query:

Helpline No:

- **Mr. Asad Habeeb: +91-9643323461**