GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

Quad-Squad

"Sky has a limit, but we don't- We are Aviators!"

Abstract:

For the first time in GTU TECHFEST-2017 we present to you the "Quad-Squad", an event gushing with adrenaline involving quadcopters. "Quad-Squad" will be proven as a great competition between all excited and fascinated participants who have the urge to race, flowing through their blood. This event will give them the opportunity to race in a real war field and also test their skills and knowledge of a quad copter.

The main Objective of the competition is to judge the knowledge and skills of all the participants in the field of Robotics, and since owning a drone doesn't make you a pilot, participants should also know how to fly a drone in the presence of hurdles and barriers. A team having real guts to face and overcome the tasks provided below with specifications can participate because "First rule of Racing, what's behind you does not count".

"So, compete for something; engage in a contest; measure one against others."

Rules:

- Quad copters are to be built according to the specified dimensions.
- The hurdles will be built according to the dimensions of the Quad, no relaxation is provided in case of dimensions except specified case.
- The performance of the Quads in all the Stages/Arena will be evaluated individually.
- A team can take part with one Quad.
- Replacement of the parts of Quad will be allowed.
- Individual participation in flying session of the team members will also be evaluated.
- If the Quad is found making damage to the arena, Judges reserve rights to eliminate a particular Stage/Check Point/Complete Participation.
- The organizers reserve right to change any or all of the above rules as they deem fit.

GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

- No quad copter will be given by organizers for taking part in the competitions. Teams deciding to take part should bring their own quad copters and all required accessories.

- The teams must adhere to the spirit of healthy competition.

- The organisers reserve the rights to change any or all of the above rules as they deem fit.

- In any case participation fees will not be refundable.

- Certificates will be issued to the team members who remain present.

- The team members are suggested to review the website for the updates.

- All participants are requested to bring their college ID cards with them.

- Final decision will be of event managers.
- The decision of event managers cannot be challenged.

- Strict discipline should be maintained during the event.

- Violation of any rule will be followed by instant disqualification.

Specifications:

- Build your Quad copter to travel from source to destination crossing various interruptions, hurdles, etc., along the path of journey.

- Skills to be tested

  - Innovation

  - Designing

  - Efficiency

  - Stabilization

  - Team Work

Complete Quad copter:

- Quad Frame

- Radio Devices

- Stabilization Unit

GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

- BLDC Motors

- ESCs

- Propellers

Additional Accessories (OPTIONAL):

- FPV (First person view)

- Gimbals

- Relaxation is given with Manual or Autonomous mode of operation depends on the ease of access of the teams.

- Landing Gears

- Non-Retractable landing gears should fix with the dimensions.

- Retractable Landing gears can be used in this case make sure that the Quad copter can fly in the hurdles without getting any accidents.

- Relaxation is given in case of Retractable Landing Gears but they are not exceeding 100mm from the prescribed dimensions.

- GPS Sensors

- Altitude Locking Mechanism such as IR Sensors, Ultra Sound Sensors, etc.

- There are no restrictions on minimum dimensions of quad copter.

- The complete quad copter should fix inside the box of dimension 625x625x300 (lxbxh). All dimensions are in mm.

- The dimension includes the Gimbal arrangement and the Landing skids. The relaxation will be provided as per the specifications.

- The secret material (Pay Load) to the quad copter can be Maximum of 250grams depending upon the final status.

- There is no restriction in making use of the Quad frame material or the Ratings of the BLDC Motors, Electronic Speed Controllers, Propellers, Batteries, camera, FPV's and Weight of the Quad copter.

- **READY MADE TOY QUADCOPTER KITS ARE STRICTLY PROHIBITED.**

GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

Round Level Tasks:

Prerequisite Round:

- We are seeking to test your technical knowledge first and hence readymade of market purchased quad copters are not allowed in this Aviation Warfield.

- So, in first-round teams will have to send a short video (5-10 mins.) explaining about their quadcopter and showing the aviation stability of it. So, that we can have faith in participants i.e. they are not violating this event's policy.

Video should consist of:

- Taking Off of Quadcopter.

- Taking Forward, Reverse, Left and Right with Quadcopter.

- Perfect Landing of Quadcopter.

- Flying Quadcopter.

- Teams who will bring readymade or market purchased quadcopters cannot be allowed to enter in race track and they will be disqualified on the spot.

- To qualify the Prerequisite Round, your quadcopters should not be readymade or market purchased in Video.

Round 1:

- In First Round, participants will be given a race track and they have to complete the track in minimum time to qualify the second round.

- Surprise Bonus points and penalty points will be there, which will be revealed on the day of event.

Round 2:

- In Second Round, participants will be given a race track and they have to complete the track in minimum time to become the winner of the event.

- Surprise Bonus points and penalty points will be there, which will be revealed on the day of event.

GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

Judging Criteria:

- The Quadcopter which will complete the race in minimum time will be declared as WINNER.

- Surprise Bonus points will be revealed on the day of event.

- Timers will be paused only at the Checkpoints, and NOT at the Stage/Arena at any cause (Timeouts are provided according to the Problem arise during flight). And it will be entertained with some negative points if the problem cannot be troubleshooted/ accidents.

- The retrace of a particular Stage/Arena is entertained with some negative points if the problem cannot be troubleshooted/ accidents.

- The time measured by the organizers will be final and will be used for scoring the teams.

- Participants and ones securing Top 3 position complying with all rules and regulations will be awarded with GTU Techfest 2017 Participation Certificate and Winner Certificate respectively.

Team size: Teams can be made of minimum 1 member and maximum 5 members.

Registration Fees: Rs. 250/- per Team

Prize Money: TOTAL PRIZE WORTH: Rs. **1,00,000/-**

Event Manager Contact:

Chirag Tanwani

Mobile Number: +91-9978942775

Email id: chirag.tanwani@gmail.com

 Rohan Lalwani

Mobile Number: +91-8460276072

Email id: rohanlalwani46@gmail.com

GTU TECHFEST 2017

Gujarat Technological University,
Established Under Gujarat Act No.: 20 of 2007

Website: techfest.gtu.ac.in
Email: gtutechfest@gtu.edu.in

Venue:
L.D. College Of Engineering,
Near Gujarat University,
Ahmedabad - 380015,
Gujarat.

Karan Sharma

Mobile Number: +91-8153098665, +91-9104503256

Email id: kschemistry2@gmail.com