STEAM DRONE RACING CHALLENGE

RULES & GUIDELINES
will likely vary somewhat as per local host

The **Drone STEAM Challenge Series** announces its call for entries for the *Drone Racing Challenge*.

1: Eligibility: The competition is open to individuals or groups of professionals, amateurs, residents, students, and visitors, as per specific guidelines and constraints of contest host (*e.g., students only*)

2: Fees: See the submission guidelines provided for each individual contest.

3: Specifications: In a stop-watched timed flight mission, pilots will use their own remotely controlled drone (for indoors competitions, drones must weigh less than 300 grams with "protected propellers") to quickly navigate a 3D obstacle course. **Winners are determined by the shortest time to successfully navigate all obstacles in the 3D course in sequence and land in the specified landing area.**

1. FAA certification or licensure is not required of any competing drone pilots or optionally assisting visual observing team members for indoor competitions.

   Hobbyist Drone Flying Licenses are required for pilots flying drones out of doors that weigh between 250 grams and 55 pounds, available at: https://www.faa.gov/uas/recreational_fliers/

2. Pilots may bring FPV first-person-view goggles if they wish, but must provide an assisting visual observer for safety if being used

3. Pilots will only be allowed one attempt at the obstacle course and must complete obstacles in the prescribed sequence and within 6-minutes or be disqualified

4. Pilot team agree not to power on their drones or controllers until cleared to do so in order to avoid contaminated signals with other drones. *Pilots must agree to immediately power down their drones and controllers as soon as the obstacle course is completed.*
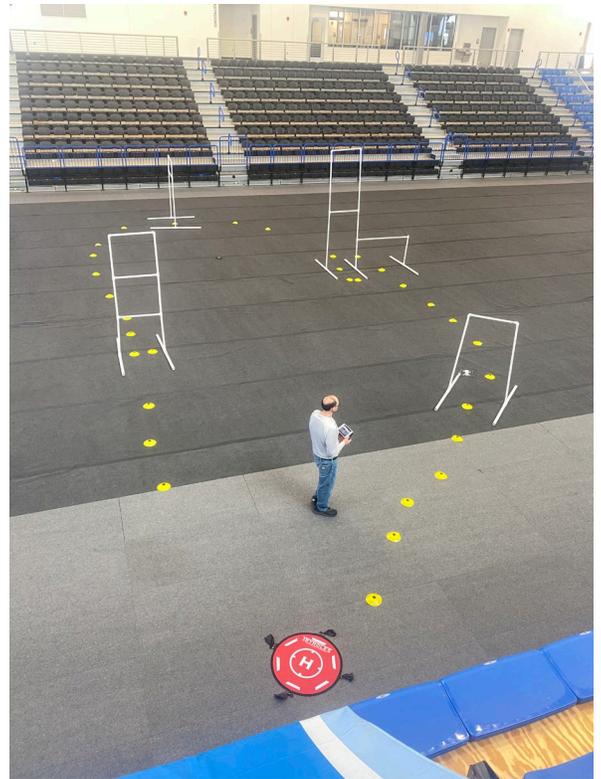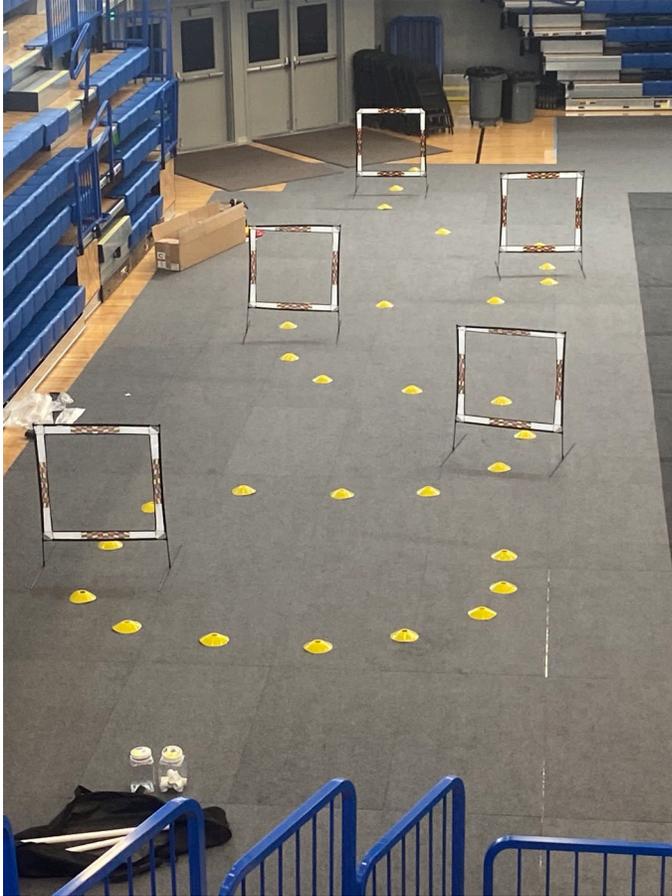
5. The event will be mostly likely held indoors in a cleared gymnasium or cafeteria space. Tournament officials will not announce the precise room or course dimensions in advance of the competition, but will have widths ranging from approximately 20 to 30 feet in width by 60 to120 feet in length with a celling height of at least 8 ft. *In no case will participants be required to fly higher than 30 ft to complete the obstacle course*

6. The obstacle course sequence will be created using 4 to 8 gates for the drone to pass through. Gates will have openings varying from a minimum of 1 ft to 7ft wide and can be in a variety of shapes including hoops and rectangles. The center of the openings will range from 1.5 feet to 28.5 feet above the ground. *The precise position of the gates will not be announced prior to the event*

7. In the unlikely event that a drone is damaged during the competition, the tournament officials nor hosts nor sponsors bear any responsibility whatsoever for any damages nor injuries of any kind

8. Official timing will be done using a stopwatch or a photogate by a designated tournament official

9. If prizes are awarded, competitors will likely be categorized by propeller size: those drones weighing less than 250 grams with propeller spans of more than 3.3" (8.4 cm) and those with smaller diameters.

  ✓ Commonly, small-sized drones are less than 3.75" (96 mm) on their longest side. Examples include NewBee FPV Drones, TinyHawk Drones, Voyager Drones (without camera); and Holy Stone Mini-Drones (without camera).
  ✓ Common medium-sized drones are more than 3.75" (96 mm), but less than 250 grams (or less than 300 grams when propeller guards are added). Examples include the Tello Drone, the DJI Mavic Mini Drone.
  ✓ Common large-sized drones more than 250 grams, which are not often flown in indoor competitions as they require FAA licensing, include the DJI FPV Racing Drone, the DJI Mavic Pro Drone, and the DJI Phantom Drone.

EVENT SEQUENCE: Pilots will be given notice to power up their drone and controller approximately 30-seconds prior to the start of the race. Drones will be launched from a marked spot on the floor. Timing starts when the tournament officials announce, "ready-3-2-1-fly!" Pilots are to complete the obstacles in sequence—if an obstacle is missed, the drone needs to turn around and try again, if the drone crashes, the team's PIC or assisting VO (optional) may cautiously enter the course and set the drone upright if needed.

When the drone completes the obstacle course and lands on the "launch pad" then a tournament official will announce the course completion time. *At that point, the team is to power down the drone and the controller immediately or be disqualified.*

In some cases, prizes may be awarded by sponsors. Please show sponsors your appreciation for their support.

Example Event Registration Form

Pilot's Full Name *

Pilot's Email Address *

Pilot's Mobile Phone Number *

(###)   ###   ####

Pilot's Age at time of event

Pilot is 18 years of age or older at the time of the event?

○ 18 years or older

○ Less than 18 years of age

If pilot is under 18 years of age, does a parent/guardian agree that the pilot may participate?

○ Yes

○ No

Student Status (this particular event is for students only)

○ K-12 level student

○ University, College, or Tech School level student

You need to bring your own drone. What type of drone will you be flying (tell us as much about your drone as possible)?

You need to bring your own drone for this indoor competition. The drone must weigh less than 300 grams and have propeller guards. Larger drones are not allowed at this competition. When measuring your drone's longest side when ready for take-off, it is

Examples of small-sized drones are NewBee drones, TinyHawk drones, Voyager drones (without camera), Holy Stone drones (without camera), and anything smaller than a Tello drone. A medium sized drone for this competition is a Tello Drone or a DJI Mavic Mini. Examples of drones that are too large for this competition and must be registered with the FAA include the Phantom, the Mavic Pro, and the DJI FPV racing drone.

○ small-sized (longest side is less than 3.75" or 96 mm)

○ medium-sized (longest side is larger than 3.75" or 96 mm, but still less than 300 grams)

Will you be using FPV Goggles? (optional)

○ Yes

○ No

○ Maybe

In which indoor events do you wish to be scheduled to compete in? *

(check all that apply)

☐ Timed Obstacle Course Race (indoors)

☐ Precision Flight Challenge Event

☐ Written Knowledge Test (closed-book, 40 minutes, multiple-choice style)

☐ Coding for Autonomous Flying Challenge

☐ Drone Film Festival (90-second video due one-week prior)

☐ Virtual Obstacle Course Race (using your own copy of Velocidrone software, your own laptop & your own controller)

Is there any additional information that the event hosts and organizers need to be aware of? (no answer required)

I understand and unreservedly agree to follow all event rules, including not powering on my drone until specifically told to do so (so as not to interfere with other drones), to follow all legal and host-specific rules, regulations, and requests, AND, given that drone flying is an inherently dangerous and expensive voluntary activity, I fully acknowledge that the organizers, event facility hosts, nor any other party will accept any responsibility for any damage(s), loss(es), or injury that might occur for any reason.

☐ Yes (you must agree in order to participate)

These rules are adapted from those developed by www.drone-challeges.org

RECOMMENDED RESOURCES:

DRONES: A wide variety of remotely controlled quadcopter drones weighing less than 250 grams with propeller guards are acceptable for this challenge.

These include the DJI Tello, the DJI Mavic Mini, and similar drones. Smaller, much faster, and more difficult to pilot racing drones—such as "tiny whoops" and "micro drones"—are acceptable as well, such as the MicroFPV NewBee Drone. *The only requirement for this event is that they be less than 250 grams and include propeller guards for safety.*

GATES: The gates used are simple, either suspended "hula hoops" or 5'x5' (or smaller) rectangles, usually made from lightweight PVC.

COURSE: The course will be laid out such that there is at least one long straight section to demonstrate a drone's speed and at least one slalom section to demonstrate a pilot's precision flying skills. *As an example, imagine a course being laid out similar to the numerals "13."*

PURCHASE: Drones and supporting equipment can be purchased at a wide variety of retailers, including FPVexperience.com and Amazon.com