Sky Breakers Drone Racing Competition Rules

If you have any questions, please contact us using the emails below or call 318-342-1323

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Supplies:

- FPV Unmanned aircraft of your choice weighing below 10 pounds
- Landing Pad
- Visual observer
- Camera person (PIC)
- Sufficient amount of batteries
- Extension cords
- Any additional supplies your team may need

Definition of terms

- DNS: Did Not Start – Aircraft fails to cross start gate.
- DNF: Did Not Finish – Aircraft fails to complete all requirements set out by the respective competition guidelines.
- DQ: Disqualified – Disqualification parameters outlined herein.
- OOB: Out of Bound General Rules

General Rules

- No drone should be flown directly above any group of people not directly associated with that team or competition
- All team members must attend a safety briefing and sign the safety sheet outlining the expectation of the competition
- All drones must be able to maintain a hover mid air
- Pilots must use FPV to pilot aircraft. This can be with goggles or a ground station, LCD type display

- Teams 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
- Teams must contain all equipment and airframes within the designated team area.
- A public charging area will be available and 120v outlets will be supplied. It is recommended that racers bring personal chargers and extension cords.
- General charging of electronic devices including radios or any device with a self-contained power supply is permitted.
- No unauthorized fight operations may occur within competition area
- All teams must have a landing pad designated for their drones
- No drone should be powered on while on landing pads other than those competing at that moment
- All teams must always stay under the max ceiling height, anyone that doesn't will be disqualified from competition and ask to end all flight operations

Judging

- All races will be managed by an appointed team of judges.
- Each race will be monitored by judges, cameras, timing/lap systems and/or marshals to maintain fair and accurate competition.
- In the event of a mid-air collision, pilots can resume the race if they are able to take off again without intervention, otherwise their heat is considered a DNF.
- Any practice or behavior deemed unsafe, (i.e., flying above the max ceiling height) will result in an immediate disqualification.

Disqualifications

- Any pilot not physically present on the flight line fully prepared to race at the time of their scheduled heat will receive a DNF for that heat and will not receive a rerun.
- Missing a gate, flag or required obstacle: If a pilot misses a gate or obstacle, pilot will receive a DNF. Pilots may have one attempt at retrying the gate or obstacle while the race is active.
- Flying out of bounds: any pilot flying out of bounds, including maximum ceiling height, will receive a DNF for the current run. Pilots receiving two infractions will be completely disqualified.
- No celebration laps or excessive displays of celebration while race heat is still active.
- Any interference caused by a pilot or airframe will result in a DNF for that heat.
- Un-sportsman like conduct will not be tolerated. All decisions made by the Race Director or Judge are final.

Field / Course

- Drone recovery crews must not enter the field until all aircraft have landed. Drone recovery crews must expediently remove all airframe parts, components and various debris from the field and do a quick analysis of the airframe to see if all parts have been retrieved. If an airframe is still powered and props are spinning, crew members must try to safely indicate via hand signals through the pilot camera the Thumbs Down signal to indicate to the pilot to power down their aircraft. In all cases do not attempt to handle an aircraft that has motors engaged, spinning or is on fire. Use the metal plate in order to cover the craft and attempt to neutralize.
- All flights are grounded while there are personnel actively on the field. Personnel engaged in active recovery of any airframe must immediately remove all battery power from the aircraft upon contact.
- The field is restricted to grounds and airspace, and only authorized personnel are allowed on the flying grounds

Emergency or Fail-Safe Procedures

- Should a team lose control of their aircraft, the team must attempt a safe landing, fly into a prescribed, crash, 'catch' zone net, cut throttle in a safe area or execute a fail- safe procedure in a safe area.
- If a pilot loses video, they must immediately execute a fail-safe procedure and/or attempt to land the aircraft via Line of Sight. All spotters must assist the pilot in determining the location of their aircraft.
- Spotters must always maintain visual line of sight of the corresponding pilot's airframe and must provide verbal directions or situational awareness details to the pilot. If the aircraft breaches the max ceiling height or goes out of bounds, a judge will indicate to the pilot the infraction and the spotter must immediately assist the pilot in maintaining control and safely landing the aircraft.

Instructions

- All drones must be registered with the FAA. (https://faadronezone.faa.gov/#/)
- Proof of registration should be submitted to Darrion Flunder-Jenkins or David King at djenkins@ulm.edu or dking@ulm.edu at least two days prior to competition.
- Each team should submit all required documentation at least two days before the competition day to Darrion Flunder-Jenkins or David King at djenkins@ulm.edu or dking@ulm.edu
- Each team must always have a drone operator and visual observer.
- Students' drones should be able to fly a complete obstacle for a total of 10 minutes without a battery change

- At the staring position, teams' drone should be hovering at 15 – 20 ft above their landing pad waiting until the start of the course
- At the start of the course teams are to fly the designated route ensuring they fly through all obstacles placed and label.
- Teams should maintain an altitude of 15ft AGL
- Teams are not allowed to fly above the obstacle height
- First drone to reach the finish line wins that round of the competition