CAPITAL YOUTH EXPO · COMPETITION RULEBOOK

No. 03 • ROBOTICS

Drone Race (FPV Quadcopter Obstacle Challenge)

Pilot an FPV/micro-quadcopter drone through a designated 3D obstacle arena featuring LED gates, slalom poles, and elevation hoops. The pilot completing the required course laps in the fastest time wins.

Rules & Specifications

Team Composition	1 Pilot + up to 3 mechanics/spotters (Max 4 members per team).
Frame & Size Specs	Diagonal motor-to-motor frame size: Max 305 mm (Micro/Mini class quadcopters). Propeller protectors recommended indoor circuits.
Weight & Power Limit	Maximum flying weight: 800g (including battery). Battery limit: Max 4S LiPo (14.8V nominal, 16.8V fully charged).
Radio & Video Protocol	• 2.4 GHz RC Transmitter control. • 5.8 GHz FPV Video Transmitter (max 25mW raceband) with FPV Goggles or Ground Monitor.
Failsafe Requirement	Mandatory Failsafe: Automatic 'Power Down' (motor cut-off) upon signal loss. Tested during pre-flight inspection.
Track & Obstacles	3D arena featuring Start/Finish Gate, Low/High Hoops, Slalom Poles, and Checkpoints. Maximum flight altitude ceiling: 10 ft.
Scoring & Penalties	• Winner determined by Fastest 3 Consecutive Laps or total course completion time. • 15-second penalty added for missing a gate/hoop. • Crashing results in DNF (Did Not Finish) for that heat attempt.

General Rules — Applicable to This Category

— Technical Scrutineering — All drones and hardware submissions must pass a mandatory safety and dimensional check prior to entering any official round.

— Strict Punctuality — Teams must report to their arena, lab, stage, or table 15 minutes before their scheduled heat or session. Late arrival results in automatic forfeit.

— Fair Play & Sportsmanship — Abusive behavior, argument with referees/judges, or unsportsmanlike conduct leads to immediate disqualification.

— Judge's Decision — The decision of the technical panel, head referees, and judges is indisputable and final.

These rules are issued by the Capital Youth Expo organizing committee and apply alongside the master rulebook. The committee reserves the right to modify rules, time limits, or format if necessary. Judges' decisions are final and non-contestable.