

SAEISS Drone Development Challenge 2025 - 26

Overview of DDC,

Drone Development Challenge (DDC) 2025 (formerly known as Aero Design Challenge) which is designed by SAEISS for graduating engineering students to provide them exposure to Design and development of UAVs. Each team is required to conceive, design and develop a prototype of a fixed wing UAV meeting the mission requirements and demonstrate their UAV models during the final event. Winner will be awarded with cash Prize and certificates.

Participating Team details,

- Engineering students pursuing graduation in any degree can participate. Participant **must** be SAEINDIA member.
- Team size: Max 10 members.

Workshop and coaching,

Teams will be coached in a workshop designed by SAEISS with Experts to work through phases of development,

- Conceptual Design & Mission Planning
- Aero pilot Simulator
- Prototype Fabrication & Flight Testing

Scope of the Challenge,

- Design, build, and demonstrate fixed-wing electric UAVs in two categories:
- Regular Class (RCA): Carry and deliver a 500g cargo kit.
- Micro Class (MCA): Carry payload fraction with lightweight, portable UAVs.

Challenge Rules

- Design, Develop and test the UAV models. The final product model must satisfy all the specifications.
- Propulsion: Electric motor only. No metal props, No lead.
- Battery: RCA: 4S–6S LiPo; MCA: Max 3S LiPo. and Radio Freq: 2.4 GHz mandatory

Specification	Regular Class (RCA)	Micro Class (MCA)
Max Aircraft Size	$L+W+H \leq 150$ in, Wingspan ≤ 72 in	Fits in ≤ 3 ft ³ box
Weight	2 – 4 kg (excluding payload)	≤ 1.5 kg (excluding payload)
Launch Method	Ground takeoff	Hand launch
Payload	500g cargo + plates	Plates only
Scoring	Workshop + Design + Presentation + Flight - Penalties	Workshop + Design + Presentation + Flight - Penalties

Flight Mission Rules

RCA:

- Perform 360° loiter, deliver cargo on marked 20ft circle target, then land in 400 ft zone.
- Multiple takeoff attempts allowed within 240 seconds.

MCA:

- Complete one 360° circuit.
- Only one hand-launch attempt per round.
- Land within 200 ft zone.

Participation Rules

- Students can pilot their models. No external pilots.
- Faculty may advise but not design/build.
- Design reports, 2D drawings, and videos must meet deadlines.
- Penalties applicable for violation of Specifications or Rules of the event.

Benefits to the Participants,

- Hands-on UAV design experience with industry mentoring
- Recognition by top aerospace & defense professionals
- Compete for certificates, cash prizes, and enhance your career opportunities.

For queries please contact, ddc@saeiss.org