S. D. M.
COLLEGE OF
ENGINEERING
AND
TECHNOLOGY

UDAAN

Aero-Team | Dept. of Mechanical Engineering

GENERAL RULES

1. The participants are required to bring their complete kits to SDMCET, Dharwad.
2. All teams must be present before the commencement of the event. Teams will be disqualified if they do not turn up during the slot allotted to them.
3. Maximum Team size of **4** members per team.
4. The teams must adhere to the spirit of healthy competition. The teams must not damage the opponent's aircraft in any way. Judges reserve the exclusive rights to disqualify any team indulging in misbehavior.
5. The aircraft would be checked for its safety before the commencement of the event and would be discarded if found unsafe for other participants and spectators.
6. **The organizers reserve all rights to change any or all of the above rules. Change in any rule, if any, will be highlighted on the website**.
7. All rounds of udaan will be held at SDMCET, Dharwad during INSIGNIA 13.
8. Judges' decisions on any matter will be considered final.

AIRCRAFT SPECIFICATION

1. An aircraft (model) is defined as a powered aircraft if it experiences exactly 4 forces during flight, namely lift, drag and weight (due to gravity) and thrust. **Note: Parachutes and Para aircrafts do not qualify as aircrafts since they do not have lift. Also airships which contain gases lighter than air are not considered as aircrafts and hence will not be allowed.**
2. The model during launch should have wingspan less than **1.5 meter** and weight less than **1000 grams**. If the models exceed the constraints mentioned above they will be **penalized.**
3. The aircraft should be motor powered. Use of IC (Internal combustion) engine is not allowed.
4. The voltage of the battery used should not be more than 12V.
5. The participants are free to use any materials of their choice. However the use of **Balsa wood, Styrofoam, Corrugated plastic sheet or Sun Board** is advisable. Balsa wood is light and easy to handle and to fabricate, hence is a good choice.
6. Participating teams are not allowed to use any electronic system that may augment the stability and control of the aircraft, like gyroscopes in an auto-pilot. For the purposes of the competition, no electronic performance enhancement should be used.
7. Participants must make all parts of the aircrafts themselves. Usage of **Ready-to-Fly (RTF) and Almost-Ready-to-Fly (ARF) kits will be penalized**. Such participants will be scored as **<u>Zero</u>** during the Design phase. However, the kit comprising of unassembled cut-pieces of balsa wood is allowed since it requires skilled work to be done upon it and one can assemble it to his or her advantage. Also use of readymade actuators/motors, remote controls is allowed.
8. The aircraft should be a single object before its launch.

ELIGIBILITY CRITERIA

1. The entries are restricted to the student currently pursuing education in a recognized institute.
2. The participants may be asked to furnish supporting documents at any later stage to prove the aforementioned condition.
3. Students from different colleges can form a single team.
4. Each team can contain a maximum of five participants.

JUDGING CRITERIA FOR DESIGN ROUND

1. **POINTS FOR LIGHTNESS OF THE AIRCRAFT**

   P_W = (1000 – W)/ 100

   P_W = Points for weight of the aircraft.
   W = Weight of the aircraft in grams at the time of launch.
   In case the weight of the aircraft exceeds 1000 grams then **negative P_W** will be awarded.

2. **JUDGE POINTS (P_J).**

   Points will be awarded for design considerations, design data explained by the participants on the white board.
   Innovation, practical applicability towards the task defined earns good points.
   Points will be awarded based on the relevance of answers given by the participants to the queries put forward by the judges.

Total Points in Design Round (40*) = P_W (10*) + P_J (20*)

***where the scores given in brackets are the maximum scores that a participant can achieve**

JUDGING CRITERIA FOR AESTHETICS

Scoring will be through voting of faculties, students and participants during **INSIGNIA 13**

The voting will be done through a ballot box and the model with the highest votes will be scored a Maximum of 10 points.

JUDGING CRITERIA FOR GLIDING ROUND

The specifications are as follows. The participants will have to do the following,

1. Put on the power and launch immediately when signal is given by an official. **You may attempt ROG or Hand Launching.**

2. Switch off the power completely, as soon as the CUT-OFF signal is given after **TWO** min.

3. Control the aircraft only with control surfaces in a purely gliding mode.

4. Attempt to TOUCH-DOWN inside the circles drawn on the ground. The point of touch-down is important; however, the model should not get damaged / crashed in landing. If so, that attempt will be disqualified. The point of landing in the circles gives the Landing score.

5. After stopping the motor, **YOU MUST LAND IN 5 MIN.S OF TIME**.

   Exact 5 min flight = maximum Flying score = 20.

   Any more or less timing will lose points equivalent to exceeding OR short for the exact 5 min. timing. **i.e. 1 point for every 15 secs of excess or shortage of time in Air**.

6. After switching off the power, you should not switch it ON, unless you are in danger of losing or crashing the model. That attempt of course will be considered void, if done so.

Note:

1. Participant will be allowed for a maximum of 2 runs. Best of the 2 runs will be considered for the final score. The runs will not be consecutive and the participants will be given time to make any small changes and repairs to the aircraft if required.
2. The participants will be allowed a total of 3 chances to launch the aircraft in every run i.e. if the aircraft falls in the launching zone in an attempt to launch it, then they can re-launch their aircraft.

TOTAL POINTS IN GLIDING ROUND = Flying score + Landing Points.

Total Competition score

Total Points in Design round + Total Points in Gliding round + Score for Aesthetics

Note: further specifications regarding the gliding arena and the overhead view of the ground with details will be uploaded shortly.