

# RC Plane 2018

## Problem Statement

Following are the points we will be judging the competition on. The points are easy to score.....If you attend all sessions.

- 1) **Build Quality:** Planes have a nasty habit of crashing to the ground even in the most experienced hands. It's up to you to avoid this. A sturdier build means a stronger plane that can withstand a few more crashes. But at the same time, it also means adding more weight. So it's up to you to find that fine balance between too heavy and just crash proof.
- 2) **Design Ingenuity:** We will provide to you all the skills necessary to build a plane as well as some design quirks.... But the final design is completely in your hands. We will judge based on the creativity of the design while still **keeping it practical and flight-ready**.
- 3) **Pre-flight setup:** Before a plane can get into the air, there are a few steps involved in making sure you don't crash and burn like balancing your Center of Gravity, checking your battery, etc. These can get pretty complicated at times and the best way to learn these is by attending the flying sessions.
- 4) **Trim (Bonus):** Fine tuning of the control surfaces is an absolute necessity to ensure smooth flight. Doing a good job on the trim scores you bonus points ;)

Now we come to the actual flight in-air:

- 5) **Take -off:** You will need to be able to successfully take off and achieve a little altitude with a smooth increase in elevation. You will also be judged based on the angle of attack provided during take-off
- 6) **Flight-time Maneuvers:** Here's the fun part of flying a plane. You will be required to complete take off, straight flight, 180 degree turn, straight flight and successful landing. Bonus marks will be awarded for performing a Figure of Eight, loop de loop. We're always waiting to award bonuses for more complex maneuvers!!

- 7) **Mid-air trim (Bonus):** The plane may not always be in perfect or even optimal weather conditions, or at the same airspeed. This will require you to adjust the trim of the control surfaces in mid-air, to ensure level flight if you take your hands off the stick. NOTE: This is a bonus part of the problem statement. It is possible if and only if you have a lot of practice in flying.
- 8) **Landing:** This part is the one that has the maximum amount of marks allocated to it. Landing will be more like crashing the first several times. It's frickin' hard. So make sure to practice a lot.... After all, practice makes perfect. PS. We will deduct marks for broken propellers.

**NOTE: We will mark down the teams that damage the planes with penalties awarded to teams that get the planes stuck in trees and the like.**