

ZEAL DRAG Virtual 2017

Guidelines for Participating Teams

The Virtual Round is part main event and prime objective is to design the complete CAD Model of the Go-kart. The event is scheduled on 21st January 2017. The design should be complete in all respects to the extent of being considered ready-for-manufacture.

The teams have to exhibit their knowledge on Automobile Design specific to Go-kart vehicle Design and its manufacturing requirements.

Time Structure for each team (Total 15 minutes per team)

1) 12 minutes: Presentation by team:

Warning bell will ring after 10 minutes.

Final bell will after 12 minutes.

2) 5 minutes: Questions –Answers session.

3) There can be minimum 2 members and maximum 4 members in the presentation hall

4) Presence of the Team Captain or Vice Captain is mandatory.

5) It is advisable that all the members representing a team should follow the dress code

Presentation Guidelines

1) Team will be judged, based on their basic understanding of automotive engineering and fundamental principles covering entire vehicle and all important aggregates. (**Critical calculations are to be presented instead of detailed calculations.**)

2) Maximum 15 slides including introduction and thank you slides shall be used for presentation.

3) Faculty Advisor, if present, will be silent observer.

Structure of Presentation: (Slide Sequence)

- 1) Preliminary Technical Specifications & Overall Performance Targets. 2D / 3D views of the proposed Go-Kart design.
- 2) Conformance to rulebook.
- 3) Proposed Engineering process for FEA – load cases and constraints, meshing size, solver used criteria for Factor of Safety & deformations. Actual FEA results may be presented but not mandatory. Design Methodology for Roll Cage is mandatory.
- 4) Steering - Design Methodology & considerations for selection of steering system, turning circle, Steering ratio, Turns lock to lock, Steering angles - Inside and outside, Steering wheel diameter, Steering wheel torque etc.
- 5) Power train (Engine to wheel including tyres) & mounting / packaging considerations, Transmission unit-Geared / CVT / Centrifugal clutch / any other, tyre size, Vehicle performance prediction e.g. minimum torque required, Vehicle speed, Acceleration etc.
- 6) Brakes - Design Methodology & considerations for brakes, type selection (Disc / drum brakes), brake circuit lay out/actuation, Stopping distance, deceleration, pedal effort etc.
- 7) Technical parts list for the vehicle (BoM): Overall weight and cost elements/ estimates and financing for the project.
- 8) Manufacturing processes required for various important vehicle aggregates, machine tools/hand tools and other facilities required. Facilities available in the college workshop.
- 9) Team size, Responsibilities assigned (team structure), Project Plan – including Validation test schedule.
- 10) Design verification/Quality process and Validation procedure (Road Tests etc.) plan up to main Event (DVP).
- 11) DFMEA
- 12) Ergonomics knowledge related to vehicle cock pit lay out – Driver seating lay out, ease of egress, vision, reach and controls.

NOTE : Teams can use their innovative ideas to make the presentation more effective. The constraint of number of slides and presentation time should be strictly followed.

Reporting and decorum Guidelines

- 1) All the members of the team shall report and get registered to the presentation hall at 10.00am. All the teams must report at auditorium one hour prior to their slot timing.
- 2) If a team fails to report on the designated time, organizing committee will allot the feasible slot for presentation.
- 3) The presentation must be in both PowerPoint and PDF format.

The presentation should reach us on or before 15th Jan 2017. Please keep the subject as team name. You are also required to bring the complete presentation (in both the formats) in a formatted Pen Drive.

All teams must carry the following things and produce them at the time of their registration:

- 1) College ID card.
- 2) Passport size pictures.
- 3) An MS Excel Sheet stating the names of the team members the way they want it on the certificates.
- 4) Two hard copies of the presentation, to be presented in front of judges along with the soft copy of the presentation in a formatted pen drive.

How to Reach the venue :

By Air : Pune Airport (25 Km)

By Train : Pune Railway Station (14 Km)

By Bus : Shivaji Nagar Bus station (13 Km)

