

9th GKDC FINAL REPORT

GKDC or **Go Kart Design Challenge** is a competition initiated by ISNEE to offer teams the maximum design flexibility and the freedom to express their creativity and imaginations with very few restrictions on the overall kart design. **ISNEE Motorsports** or **Indian Society of New Era Engineers** is an organization that provides a platform for engineering and diploma candidates to steer their path towards Technical and Managerial expertise. It aims to bridge the gap between the academy and industry by offering a series of design competitions and skill development programs to students where they can learn and implement the knowledge gained through their academics

The challenge is to develop a kart that can successfully compete in all the events described in the GKDC rulebook. Teams are to assume that they work for a firm that design, fabricate, test and demonstrate a prototype kart for the market. The kart's performance such as acceleration, braking, handling and its durability is tested through various events described in rulebook.

We the students of P.E.S. College of Engineering, Mandya participated in the 9th GKDC organized by ISNEE motorsports. The go-kart design competition was held at Aruani Grid, Bangalore from 22nd Aug 2022 to 25th Aug 2022. We entered the event under the name of "PESCE DRAFTERS", our team consists of 13 members. The 9th GKDC event had some major rule changes which meant we had to build and fabricate a new kart to be homologated by ISNEE. We completed building our kart under the guidance of our faculty advisor Asst. Prof. Pavan K N. Our ambition was supported by our college and we were granted financial support and were recognized for taking such bold endeavours.

We had an existing team and for this year we wanted to give a chance for freshers to gain experience and continue participating in such prestigious events. Our recruiting process was rigorous and we were keen to recruit those who had the enthusiasm to learn and contribute something other than theoretical and

curriculum bounded knowledge. We participated in the CV (combustion vehicle) category with the engine capacity limited to 150cc. As stated above due to the rule change we had to build a new chassis to be eligible for the event. We were keen to optimize the material usage to reduce the over all weight of the kart and to make it safer for our drivers. It took us nearly two months to fabricate and test our kart and we spent majority of the final week to diagnoses and recondition our design.

DAY 1

To talk about the competition itself we had packed the pit equipments and were doing some light driver training in the campus and were ready to leave by 6 am to attend the inauguration of the 9th GKDC event, we were to register our team and get our pit allotment to set up our equipments and have our pit crew ready for general inspection. We had to present our kart infront of the scrutinizers who would inspect it for any safety concerns and suggest if we had violated any rules.



Our first day was majorly spent travelling to the venue and getting accustomed to the gird. We had to maintain a record of the equipments and tools

we had brought along to the event and set up the trolley to safeguard our kart. We had to keep an accessible pit to efficiently maneuver and reduce our response time during any crisis. We were then briefed about the event conduction by the ISNEE organizers and were given specific instructions to flow throughout the event.

DAY 2

We reached the grid by 9 am and all the team captains were called for the captain's meet. Day two was about Document verification and Preliminary Technical Inspection (TI). We were given a set time to make modify if our design wasn't upto the mentioned standards. The technical inspection consisted of testing the welded joints, wiring harnesses, system functionality, ground clearance of the karts. The preliminary inspection was taken by two scrutinizers and were guided by them to take care of necessary changes that might have been effected during transportation.

We had to clear all the criterias mentioned in the TI Sheet to be eligible for the dynamic events. During our TI we had a problem regarding the ground clearance and were told to make the adjustment. We quickly rectified and went ahead with TI. We were given the approved mark and our preliminary TI was completed.





DAY 3

The final TI took place on day 3. We cleared the TI and were on the way to take part in the static events such as CAE report verification and Business presentation after giving the presentation in front of the jury, we were questioned regarding the contents of our presentation to verify whether our understanding about the current market was on par. Once we cleared them we were given the green signal to proceed to the dynamic events. The events were in the order:

1. Brake Test
2. Skid-Pad
3. Autocross

We were informed that the endurance race will be held the next day and the award ceremony will be held on day 4.

DAY 4

On the final day of the event, the moment that we were eagerly waiting had finally arrived. The endurance race was first scheduled for Electric Powered karts and subsequently the Combustion Vehicles segment was to be held. Our drivers were given the chance to be familiar with the track by taking 2 warm-up laps. We formulated a plan and set up our pit with 4 crew members, 2 of our teammates were given media pass in order to cover the event. We had 3 teammates apart the pit crew to spot and inform if our driver was struggling with any issues.

We started from P10 on the grid. As the race progressed we gained two position in just the first lap and were at P6 by the end of the third lap. By the end of the 4th lap we were at P3 and our driver was aggressively pushing forward the pack. By the 12th



lap we were P1 and had lapped the karts which were below P5. During the 13th lap of the race we saw our karts pace slow down and figured there was an issue plaguing our kart. On the 15th lap we had an engine failure at the chicane. Our pit crew rushed in and we figured that the brake over travel switch had cut off the electrical circuit forcing the engine to stop. We figured that as our driver was aggressive and had gone over a few chicane and that had accidentally triggered the switch. We made the necessary adjustments and our kart was good to go. But during all this our lead was taken and we were at P12. Our driver pushed the kart to its limits and by the end of the 19th lap we were at P7, the last lap of the race began as we were fighting hard for P3. As the chequered flag dropped we finished the race at P7. Though we were disheartened by the incident we kept our spirits

high and we gave our best in those circumstances. After the race concluded, out of 22 karts only 10 karts made to the finish line, the rest did not finish. Every CV kart will be inspected for fuel economy and we scored a good position under fuel economy category.

Sl no.	Events	Scores	Position
1	Acceleration	70.74	4 th
2	Autocross	69.09	6 th
3	Endurance and fuel economy	81.62	8 th
4	Skid-pad	65.74	5 th
5	Static events	78.5	13 th
6	Final ranks	365.69	9 th



