

Online
ADVANCED
TRAINING

5 Days

Design & Development of Go Karts

12 hours of intensive and advanced training that focuses on the design and development of a Go Kart right from scratch.



helpline: 9410430424/25

<https://isnee.in/gkdc>

Theory | Calculations | Case Studies

**Login into your team account
to register**

ABOUT THE SERIES OF WEBINARS:

This event is proudly presented by IRDO in collaboration with ISNEE Motorsports Pvt Ltd. At IRDO, we are dedicated in our mission to educate and inspire through a range of programs designed to promote innovation in Motor Sports, E-mobility, and Renewable Energy. Our goal is to empower the youth, motivating them to reach their full potential and excel in their chosen fields.

IRDO is dedicated to lifelong learning and regularly conducts a comprehensive series of online and offline sessions. These sessions mentor over 1,000 young graduates and professionals each month, providing them with the skills and knowledge necessary to succeed in today's fast-paced world. Our interactive sessions are designed to be fully immersive, focusing on skill development, research, and prototyping to nurture indigenous technology in line with the "MAKE IN INDIA" initiative.

Our programs are meticulously crafted to ensure participants gain practical insights and hands-on experience. IRDO's commitment to education is evident in our approach to teaching. We bring industry experts to share their knowledge, providing participants with a unique opportunity to learn directly from those at the forefront of technological advancements. This exposure to real-world scenarios and challenges equips our participants with the necessary tools to innovate and excel.

We are excited to introduce a special 5-day program featuring a series of webinars by industry experts. This intensive program will help your team understand the critical points required to design, build, and ultimately win the competition. These webinars will focus intensely on the design and development of a competition kart, guiding you through the specific requirements outlined in the rulebook.

Mode of Program	Online	
Registration Process	https://isnee.in/irdo/Registration/Webinar-Reg.aspx	
Program Name	Design and Development of Go Kart	
Registration Fee (Single)	GKDC Participant	₹ 1499/- Per Head
	Non GKDC Participant	1699
Registration Fee (Group of 5+)	GKDC Participant	₹ 1299/- Per Head
	Non GKDC Participant	1499
Last Date of Fee Payment	31-Jul-24	

Duration	5 Days (12 Hours)
Registration Start Date	09-Jul-24
Registration End Date	31-Jul-24
Program Start Date	09-Aug-24

CONTENTS:

1. Day 1 - Introduction to GKDC

- 1.1. Rulebook
- 1.2. Static and Dynamic Events
- 1.3. Cost Report Documents
- 1.4. Importance of DSS
- 1.5. EDR
- 1.6. BPES and Business Plan
- 1.7. Major Changes in GKDC
- 1.8. Percy for Design
- 1.9. Iteration Zero
- 1.10. Rough Layout of the Kart
- 1.11. Rulebook Compliance
- 1.12. A Step towards Technical Development
- 1.13. Setting your Goals Right

2. Day 2 - Wheel Loads

- 2.1. Static Load Distribution
- 2.2. Center of Gravity Location
- 2.3. Roll Center
- 2.4. Lateral Load Transfer
- 2.5. Longitudinal Load Transfer
- 2.6. Asymmetrical Effects
- 2.7. Effects of Banking
- 2.8. Chassis Stiffness

3. Day 3 - Wheel Assembly and Steering

- 3.1. Components of Wheel Assembly

- 3.2. Front Wheel Geometry
- 3.3. Front Upright Design
- 3.4. Rear Wheel Geometry
- 3.5. Rear Upright Design
- 3.6. Turning Geometry
- 3.7. Ackerman Geometry
- 3.8. Ackerman Percentage Calculation
- 3.9. Turing Radius Calculation
- 3.10. Steering Ratio
- 3.11. Tie Rod Length Calculation
- 3.12. Wheel Alignment
- 3.13. Ride and Roll Steer

4. Day 4 – Drivetrain and Brakes

- 4.1. Transmission and its Requirements
- 4.2. Speed Requirements for Dynamic Events
- 4.3. Acceleration Determination
- 4.4. Final Drive Ratio Selection
- 4.5. 5.5. Differential
- 4.6. 5.6. The physics of Braking
- 4.7. 5.7. Basic Functionality
- 4.8. 5.8. Design Objectives
- 4.9. 5.9. Components of Brake Assembly
- 4.10. 5.10. Brake System Design
- 4.11. 5.11. Rotor Radius Calculation

4.12. 5.12. Stopping Distance

4.13. 5.13. Stopping Time

5. Day 5 - EV Architecture of a GO KART

5.1. Motor

5.2. Controller

5.3. 6.3. Battery

5.4. LV & HV Circuits

5.5. TSAL (Tractive System
Active Light)

5.6. RDS (Ready to Drive
Sound)

5.7. Accumulator Isolation
Relay

5.8. Power Shutdown Switch

5.9. Rulebook Compliance

Battery Selection

5.10. Battery Selection

5.11. Battery Range
Calculation

5.12. BMS

5.13. Shutdown Circuit

5.14. Safety System

5.15. Rulebook Compliance

After the registration process, a Google form will be sent to the registered participants, inviting them to suggest additional topics for the workshop that are not mentioned in this document. A digital certificate of participation will be issued after the program concludes.

REGISTRATION PROCEDURE:

Step 1. Logon to <https://isnee.in/irido/Registration/Webinar-Reg.aspx> and submit details

Step 2. Complete Fee payment

PAYMENT PROCEDURE:

Fee can be transferred using any upi app to this upi: **isneepay@axl**

Upon successful transfer of the fee, send the payment reference to the ISNEE WhatsApp Helpline (9410430424).

WHY YOU SHOULD ATTEND?:

- 1. Rules Clarification:** Gain a clear understanding of the competition rulebook, ensuring you meet all the requirements and avoid penalties, which can significantly impact your performance.
- 2. Expert Knowledge:** Gain insights from industry experts and experienced engineers on the theoretical and practical aspects of go-kart design.

3. **Comprehensive Learning:** Covering key topics over 5 webinars, totalling 12 hours of in-depth learning, ensuring a thorough understanding of the principles and techniques involved.
4. **Hands-On Experience:** Acquire practical knowledge that can be directly applied to building and designing a race go-kart, preparing participants for real-world challenges.
5. **Problem-Solving Skills:** Learn about common challenges faced during go-kart design and their efficient solutions, enhancing your problem-solving abilities.
6. **Competitive Edge:** Get a glimpse of the competition setup and requirements, helping you strategize and prepare effectively for both evaluation and on-track events.
7. **Innovative Design Techniques:** Learn about the latest trends and innovative design techniques in go-kart engineering, giving you an edge in creating a more efficient and competitive go-kart.
8. **Enhanced Performance:** Equip yourself with knowledge and strategies to perform better in the Go Kart Design Challenge, increasing your chances of success in the competition.
9. **Networking Opportunities:** Connect with fellow participants, industry professionals, and experts, expanding your professional network and potential collaborations.
10. **Certification:** Receive a certificate of participation, adding value to your resume and showcasing your commitment to learning and professional development.