AUTOMOBILE CLUB 2024-25

Government College of Engineering

Nagpur

OMKAR IJGIRWAR
President
Automobile Club
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AIM

The aim of the club is to nurture and expand knowledge of automobile sector, and to cultivate interest and provide a platform to showcase practical knowledge of students irrespective of their academic backgrounds. The Automobile club, focuses on enhancing awareness of individuals about quality automation in the industry and boost excellence in vehicle design with modified safety features.

Customer satisfaction is the key for innovation. The long term goal, of enhancing awareness, will lead the customers to question automobile manufacturers, regarding various vehicle aspects, ultimately changing the definition of quality product from, complied to all regulations, to complied to customer satisfaction. With this vision, we aim to contribute to automobile sector industries and boost ‘Make in India’ initiative.

OBJECTIVES

1. To create an interest in students about Automobile manufacturing
2. To develop partnership with Industries for product development and research in automobile sector.
3. To create a chain link of participation in Go-Kart, Eco-Kart, SAE Supra, formula Bharat.
4. To be a part of Society of Automobile engineers (SAE).
5. To design and build working vehicle model and present it at national level competitions.
6. To assist students with automobile related projects.
7. To make students familiar with latest government regulations and policies related to safety and luxury, as well as, roads and highways.

FACULTY COORDINATOR: PROF. A.A.UPLAP

COMMITTEE 2024-25

- PRESIDENT : OMKAR IJGIRWAR
- VICE PRESIDENT : YAHAYAA TAJI QUAZI
- SECRETARY : PRASANNA ADE
- TREASURER : ADITYA MUDDAMWAR
- EXECUTIVE MEMBER : DEVKUMAR YERME

CLUB ACTIVITY

1) TRAINING SESSIONS 2024-25

Training Sessions Report: Introduction

The Automobile Club recently conducted a series of training sessions aimed at juniors to impart knowledge about go-karting. The sessions were structured to cover various departments crucial to understanding go-kart dynamics and performance, including Powertrain, Steering, Braking, Fabrication, and Design & Analysis.

Powertrain Department:

In the Powertrain department, participants learned about the heart of the go-kart: the engine, transmission, and drivetrain components. They gained insights into engine types commonly used in go-karts, transmission systems, and the role of drivetrain configurations in optimizing performance and power delivery.

Steering Department:

The Steering department focused on the mechanisms and principles behind go-kart steering systems. Participants delved into topics such as steering geometry, steering ratio, and the importance of responsive steering for maneuverability and control on the track.

Braking Department:

The Braking department provided participants with an understanding of braking systems essential for safety and performance. They learned about different braking technologies, such as disc brakes and drum brakes, as well as techniques for optimal braking, including modulation and threshold braking.

Fabrication Department:

In the Fabrication department, participants were introduced to the process of building a go-kart from scratch. They learned about materials selection, welding techniques, chassis design, and assembly methods crucial for constructing a safe and competitive go-kart.

Design and Analysis Department:

The Design and Analysis department focused on the theoretical and practical aspects of designing a high-performance go-kart. Participants learned about aerodynamics, suspension design, weight distribution, and the use of computer-aided design (CAD) software for modelling and simulation.

Conclusion:

Overall, the training sessions provided juniors with a comprehensive understanding of the various departments involved in go-karting. By equipping them with knowledge in Powertrain, Steering, Braking, Fabrication, and Design & Analysis, the Automobile Club aims to nurture the next generation of skilled and knowledgeable go-kart enthusiasts, fostering a culture of safety, innovation, and excellence in the sport.

2) FKDC WORKSHOP IN MANIPAL

The Formula Kart Design Challenge (FKDC) Workshop was successfully conducted in Manipal, providing an enriching experience for students passionate about motorsports and vehicle engineering.

The workshop covered key aspects of designing and building a high-performance go-kart, including chassis design, engine selection, transmission systems, braking mechanisms, and aerodynamics. Experts from the industry and academia guided participants through theoretical sessions and hands-on demonstrations.

Students actively engaged in discussions, design activities, and simulations, gaining valuable insights into the engineering principles behind competitive kart racing. The workshop concluded with a Q&A session, allowing attendees to clarify their doubts and enhance their understanding.

Overall, the FKDC Workshop in Manipal was a great success, inspiring young engineers to innovate and apply their technical knowledge in real-world motorsport application.

3) FORMULA KART DESIGN CHALLENGE SEASON 8

We participated in FKDC Season 8 which was held in Coimbatore in October 2024

Introduction:

The Formula Kart Design Challenge held in Coimbatore in October 2024 brought together karting enthusiasts, engineers, and designers from across the region to showcase their innovative designs and driving skills. This report provides an overview of the event, highlighting key activities, participants' experiences, and outcomes.

Event Overview:

The Formula Kart Design Challenge in Coimbatore featured a series of competitive events, including design presentations, technical inspections, and on-track racing. Participants were required to design and build their karts within specified regulations, emphasizing innovation, performance, and safety.

Activities:

Design Presentations: Participants presented their kart designs to a panel of judges, detailing their engineering concepts, aerodynamic features, and technological advancements. This phase allowed teams to demonstrate their understanding of karting principles and showcase their creativity. Technical Inspections: Karts underwent rigorous technical inspections to ensure compliance with safety standards and regulations. Inspectors evaluated various components, including chassis, brakes, steering, and safety equipment, to certify the karts for on-track competition.

On-Track Racing: Teams competed in thrilling on-track racing sessions, demonstrating the performance and handling capabilities of their karts. Races were held on a challenging circuit, testing drivers' skills in cornering, overtaking, and strategic decision-making.

Participants' Experiences:

Teams participating in the Formula Kart Design Challenge in Coimbatore had the opportunity to learn, collaborate, and showcase their talents. The event fostered a spirit of camaraderie among participants, encouraging knowledge sharing and friendly competition. Participants gained valuable insights into kart design, engineering principles, and race craft, enhancing their skills and passion for motorsport.

Outcomes:

Our overall competition national rank was 7^{th} . The Formula Kart Design Challenge in Coimbatore provided a platform for innovation, excellence, and sportsmanship. Participants showcased their ingenuity and dedication, contributing to the advancement of karting technology and performance. The event inspired the next generation of karting enthusiasts and highlighted the importance of collaboration and continuous improvement in motorsport.

Conclusion:

The Formula Kart Design Challenge in Coimbatore was a resounding success, bringing together the karting community and celebrating creativity, talent, and passion for motorsport. The event demonstrated the potential of karting as a competitive and accessible form of racing, inspiring participants to pursue their dreams and push the boundaries of innovation in the sport.