



ICARUS

In this engineering category, delegates will embark on an exciting journey that blends creativity with technical challenges. Participants will face real-world engineering problems that demand innovative solutions, pushing their critical thinking and collaboration skills to the limit. While the tasks may be complex, they will also be incredibly rewarding, offering moments of triumph and discovery. This dynamic environment promises to inspire a passion for engineering, fostering both personal growth and a sense of camaraderie among participants.

Round 1:

In this round, participants will concentrate on constructing a car chassis using the provided materials. This chassis serves as the crucial foundation for the car, supporting all components and ensuring stability and performance in the upcoming rounds. A well-designed chassis will be essential for the successful integration of systems such as propulsion and control, directly influencing the overall effectiveness and efficiency of the vehicle.

Dimensions:

- Minimum: 1 ft × 1.5 ft
- Maximum: 2 ft × 3 ft

Round 2:

In Round Two, delegates will delve into the critical components of the car's gear and axle system, alongside the essential wiring for power and control. This round is pivotal, as the gear system will determine the vehicle's speed and torque, while the axle setup ensures smooth wheel rotation and stability.

Objectives:

- **Gear System Design:** Participants will select and install gears to optimize performance, balancing speed with torque for effective movement.
- **Axle Installation:** Delegates will focus on securely attaching axles to the chassis, ensuring proper alignment for smooth operation.
- **Wiring Setup:** Participants will wire the car's electrical components, including motors and batteries, to establish a reliable power source and control system.

Round 3:

In Round Three, delegates will showcase their projects as their cars undergo thorough evaluation and analysis. This round focuses on assessing each vehicle's speed, stability, and durability—key factors that determine overall performance.

Evaluation Criteria:

- Speed: Judges will measure the speed of the car, providing insights into the effectiveness of the gear and axle systems.
- Stability: Participants' designs will be tested for balance and control during movement, ensuring that cars maintain their trajectory without wobbling or tipping.
- Durability: This criterion assesses the robustness of each car, examining how well it withstands wear and tear during performance trials.

Note: Delegates per team for all rounds is 3-4.