



# ROBOTICS CLUB

Goldengate Int'l College

## ROBORACE PROPOSAL

Project Title: Roborace

Date: May 27, 2025

Club: Golden Gate Robotics Club

### **1. Executive Summary**

Roborace is an exciting robotics competition designed to engage students in hands-on learning through the design, building, and racing of autonomous robots. The event encourages creativity, teamwork, and problem-solving, while introducing students to the basics of robotics and automation. Through this competition, participants will apply their technical skills in a fun and competitive environment, helping them better understand real-world applications of science and technology. Roborace aims to inspire the next generation of innovators by making robotics both educational and enjoyable.

### **2. Objectives**

The goal of the Roborace event is to help students learn and explore robotics in a fun and exciting way. By building and racing their own robots, students get to use their creativity, learn how to solve problems, and work as a team. The event also helps them understand how robots work in real life and builds their interest in science and technology. It's a great way to learn new skills while having fun through friendly competition.

### **3.Event Description**

Roborace is a robotics competition where students design, build, and program their own robots to compete on a race track. The main goal is for each robot to complete the track as quickly and accurately as possible, either autonomously or with minimal manual control, depending on the category. The event tests the speed, stability, and smart decision-making of the robots as they navigate turns, obstacles, and checkpoints.

This event is open to students who are interested in robotics, engineering, and technology. It provides a hands-on learning experience that helps participants improve their technical knowledge, problem-solving skills, and teamwork. Roborace is not just about winning — it's about learning, innovation, and having fun while exploring the world of robotics.

### **4. Event Format**

#### **Round 1: Qualifiers**

- Simple race through Speed + Obstacle Zones
- Top 10 teams selected based on time and control

#### **Round 2: Semi-Finals**

- Full track + Intelligence/Mystery Zone
- Head-to-head knockout format

#### **Final Round: The Showdown**

- Top 3 teams race simultaneously
- Winner determined by race time and bonus points

## 5.Detailed Workshop Schedule

### Day 1: Robotics Workshop Schedule

Session	Time	Activity	Details
Session 1	11:00 AM - 1:00 PM	Theory & Lecture	- Introduction to Robotics - Applications - Components & Principles
Break	11:30 AM - 11:45 AM	Short Refresh Break	
Session 2	1:30 PM - 3:30 PM	Intro to Parts + Hands-On Practice	- Part Identification - Tinkering Session
Break	3:30 PM - 3:40 PM	10-Minute Break	
Session 3	3:40 PM - 5:30 PM	Self Build With Mentor	- Start Building Your Robot - Mentor Support
Fun Session	After Session 3	Interactive / Team Fun Activities	- Ice-breakers or Games (Optional)

## Day 2: Robotics Workshop Schedule

<b>Time</b>	<b>Session</b>	<b>Activity Description</b>
<b>9:00 AM – 1:00 PM</b>	<b>Build Completion</b>	<b>Participants finalize robot builds and test systems</b>
<b>1:00 PM – 1:30 PM</b>	<b>Orientation to Robo Competitions</b>	<b>Rules, safety brief, and competition structure</b>
<b>1:30 PM – 2:00 PM</b>	<b>Team Setup &amp; Strategy Brief</b>	<b>Teams form and prepare for the race</b>
<b>2:00 PM – 4:00 PM</b>	<b>RoboRace Competition</b>	<b>Team robots race or perform tasks</b>
<b>4:00 PM – 5:30 PM</b>	<b>Closing Ceremony</b>	<b>Prizes, certificates, and event wrap-up</b>

## 5. Robotics Kit & Event Inclusions

<b>Item/Component</b>	<b>Quantity/Details</b>
<b>ESP8266 Microcontroller</b>	<b>1</b>
<b>Battery Case</b>	<b>1</b>
<b>Rechargeable Batteries</b>	<b>3</b>
<b>Switch</b>	<b>1</b>
<b>15238 IR/Obstacle Sensor</b>	<b>1</b>
<b>Motors with Wheels</b>	<b>4 (Motor + Wheel combos)</b>
<b>Basic Wiring &amp; Tools</b>	<b>Included in Basic Kit Package (₹150)</b>
<b>Theory &amp; Concept Sessions</b>	<b>Robotics fundamentals + applications</b>
<b>Project-Based Learning</b>	<b>Hands-on robot building</b>
<b>Closing Ceremony</b>	<b>Certificates + Showcase</b>
<b>Premium Mentorship</b>	<b>1-on-1 guidance post-event</b>
<b>Free Competition Entry</b>	<b>Includes RARE Robotics Event admission</b>

## 6. Expected Outcomes

- Build a working robot that can follow a track and handle obstacles on its own or with manual control.
- Learn how sensors and controls help robots move and make decisions.
- Prepare a robot that can compete in other contests or be shown at exhibitions.
- Create a strong base for making better and more advanced robots in the future.

## 7. Workshop Highlights

- Robot design & assembly
- Hands-on programming sessions
- Team-based competition
- Certificates, mentoring, and prizes

## 9. Awards & Recognition

- 🏆 1st, 2nd, 3rd Place Prizes
- 🏅 Best Design Award
- 🌟 Audience Choice Award
- 📄 Participation Certificates for all

## Conclusion

The Robo Race event offers a thrilling and engaging platform for students to explore the world of robotics in a hands-on and collaborative way. By designing, building, and racing their robots, participants develop critical skills such as creativity, teamwork, and problem-solving. This experience not only reinforces theoretical knowledge but also bridges the gap between classroom learning and real-world applications.