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MANJARA CHARITABLE TRUST  
RAJIV GANDHI INSTITUTE OF TECHNOLOGY, MUMBAI  
(Permanently Affiliated to University of Mumbai)  
DEPARTMENT OF MECHANICAL ENGINEERING  
(NBA- Accredited UG Program)

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**Program Outcomes (PO) Engineering Graduates will be able to:**

- PO1 Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- PO2 Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- PO3 Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- PO4 Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- PO5 Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.
- PO6 The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
- PO7 Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
- PO8 Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
- PO9 Individual and team work:** Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
- PO10 Communication:** Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

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- PO11 Project management and finance:** Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.
- PO12 Life-long learning:** Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.

### Vision

To create competent technical professionals in Mechanical Engineering with ethical behaviour and environment consciousness.

### Mission

1. To provide contemporary and cutting-edge technical education in Mechanical Engineering.
2. To provide an ambience which nurtures research ideas in futuristic domains of Mechanical Engineering.
3. To initiate project based learning and practical exposures in the area of Mechanical Engineering.
4. To direct faculties in research and consultancy / advisory roles.
5. To establish strong linkages with well-known national and international technical institutes.
6. To promote the culture of imbibing environmental care and eco-friendly designs.
7. To become a department of aspiration & choice.

### Program Educational Objectives (PEOs)

**PEO1:** To prepare the stakeholder to exhibit leadership qualities with demonstrable attributes in lifelong learning to contribute to the societal needs.

**PEO2:** To make ready the stakeholder to pursue higher education for professional development.

**PEO3:** To help the stakeholder to acquire the analytical and technical skills, knowledge, analytical ability attitude and behavior through the program.

**PEO4:** To prepare the stakeholders with a sound foundation in the mathematical, scientific and engineering fundamentals.

**PEO5:** To motivate the learner in the art of self-learning and to use modern tools for solving real life problems and also inculcate a professional and ethical attitude and good leadership qualities.

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**PEO6:** To prepare the stake holder to able to Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

### **Program Specific Outcomes (PSOs)**

**PSO1: Successful Career and Entrepreneurship:** Graduates will be able to understand the social-awareness and environmental wisdom along with ethical responsibility to have a successful career and to sustain passion and zeal for real-world applications using optimal resources as an entrepreneur.

**PSO2: Hobbies and Career:** Graduates have nurtured their hobbies which are useful in their specific chosen career.

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## *TEAM RGIT RACING*

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The purpose of TEAM RGIT RACING - Student Chapter at Rajiv Gandhi Institute of technology, Mumbai - To enhance the knowledge base of members who are mobility practitioners. To provide to its members access to SAE International programs and services globally enabling them to practice world class standard in productivity and quality. Its area of focus is Automotive, Automobile, Aerospace and Commercial Vehicle.

SAE International is a professional organisation and has over 138,000 global members. Aside from its standardization efforts, SAE International also devotes resources to projects and programs in STEM education, professional certification, and collegiate design competitions.

SAEINDIA is membership organization Founded in 1994 and in 2003 SAEINDIA became an Affiliate of SAE International. Today the President of SAEINDIA is Dr. R.K. Malhotra and has a membership count of more than 40,000 members around India.

Website TEAM RGIT RACING: <https://www.teamrgitracing.com/>

Website SAE INTERNATIONAL: <http://www.sae.org/>

Website SAEINDIA: <http://www.saeindia.org/>

**Team RGIT Racing's** Faculty Advisers: Prof. S. D. Gaikwad

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**Events & Activities from January to April 2024**  
(Even sem)

<b>Events &amp; Activities</b>	<b>Dates</b>
Cost and manufacturing prelims	9 <sup>th</sup> January 2024
Loading the car from Mumbai and unloading in Coimbatore	13 <sup>th</sup> January & 17 <sup>th</sup> January
Team travelling to Coimbatore and main event	17 <sup>th</sup> to 27 <sup>th</sup> January 2024
Loading car in Coimbatore and unloading in Mumbai	24 <sup>th</sup> January & 29 <sup>th</sup> January 2024
Recruitment orientation for interested students	13 <sup>th</sup> February 2024
Recruitment interviews	28 <sup>th</sup> February 2024
Exhibition at Don Bosco Institute of technology	29 February and 1 <sup>st</sup> March 2024
F1 simulation in Synergy	26 <sup>th</sup> and 27 <sup>th</sup> March 2024
Pre-registration for Formula Bharat 2025	17 <sup>th</sup> April 2024

## **Accomplishments at main event Formula Bharat 2024**

- 5<sup>th</sup> in Business plan presentation
- 13<sup>th</sup> in cost and manufacturing
- Overall Rank – 16<sup>th</sup> out of top Indian Universities.

### **Cost and manufacturing prelims**

*Zoom*

We participated in the Cost and Manufacturing Prelims as required by Formula Bharat rules.

Cost and Manufacturing Prelims:

- Format: The prelims takes place virtually.
- Requirement: We showcase a live view of our car.
- Purpose: This preliminary round determines which teams will advance to the finals.
- Judging Session:
  - Participants must ensure their video is turned on.
  - Provide a live feed of the vehicle.
  - Failure to comply with either requirement will result in disqualification from the Cost and Manufacturing Event.

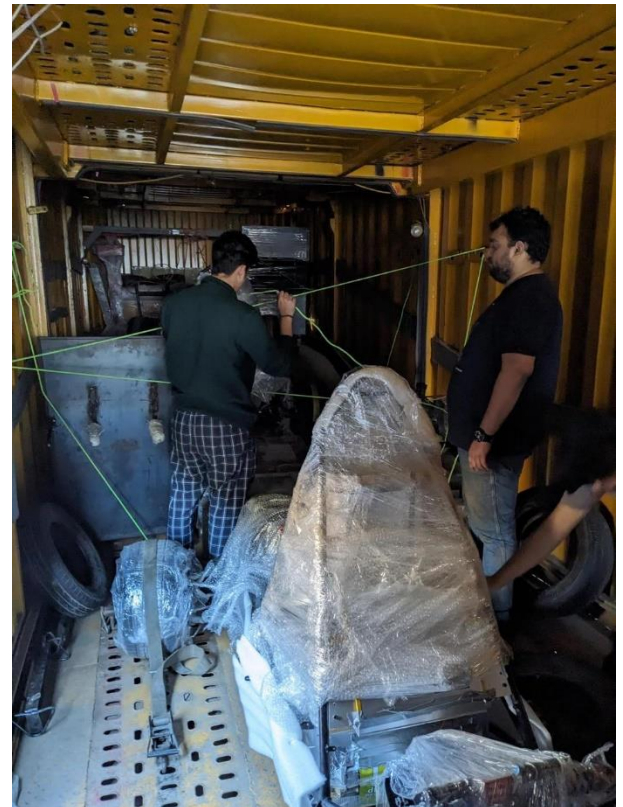
This participation is crucial for advancing to the final round and demonstrating our vehicle's cost and manufacturing efficiency.



## **Loading car from Mumbai and unloading in Coimbatore**

*Mumbai and Coimbatore*

Along with nine other Formula Student teams from different colleges in Mumbai, we loaded our car and other equipment onto a trailer at the Ghatkopar Highway. The trailer then departed for Coimbatore, where the main event takes place.

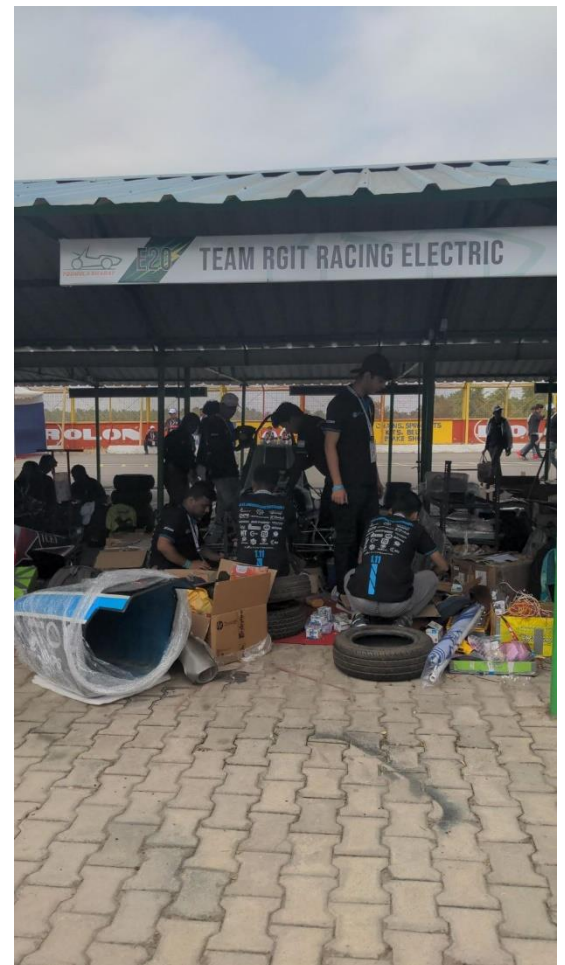


Unloading the car and our equipment in Coimbatore for the competition

## **Team Travelling to Coimbatore and main event**

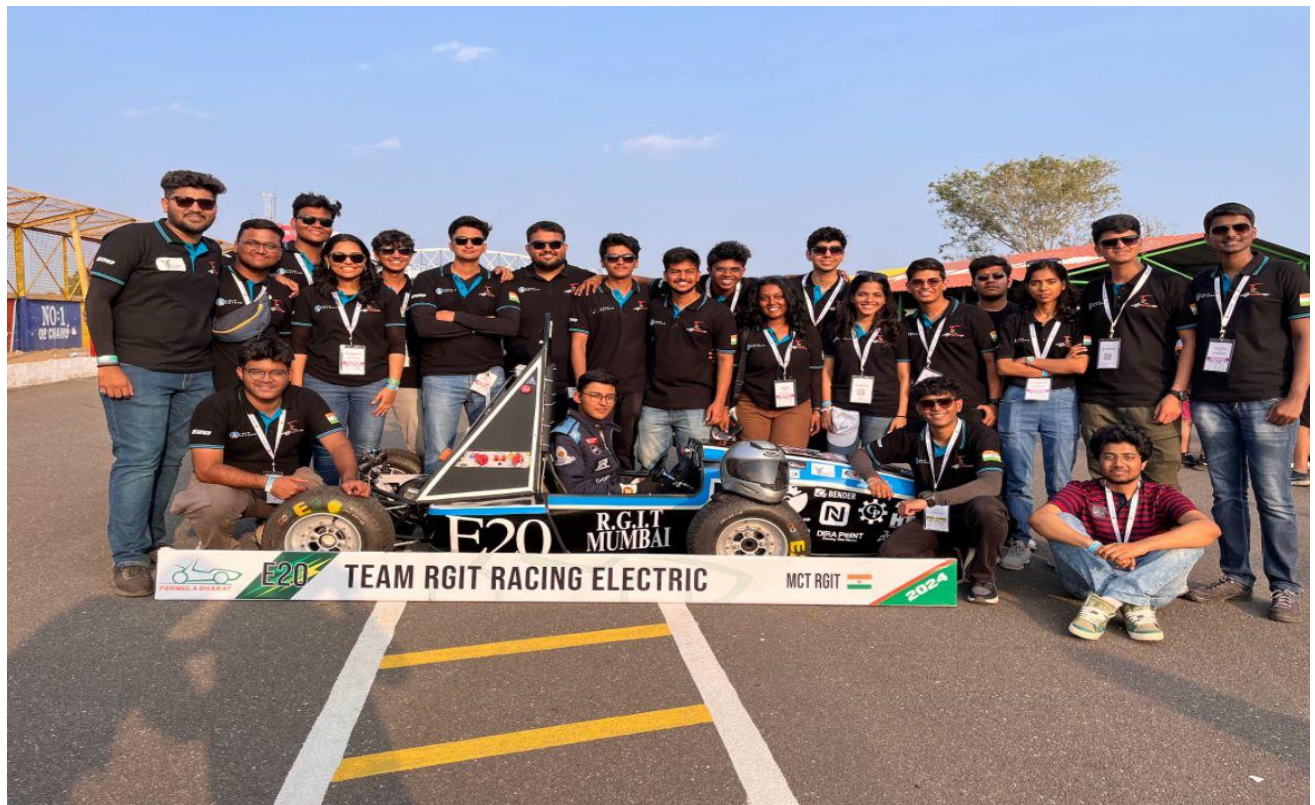
*Coimbatore*

We reached Coimbatore and participated in Formula Bharat 2024. We appeared for tech inspection with our car. We cleared pre- tech inspection and tried to clear accumulator tech inspection, electrical tech inspection and mechanical tech inspection on the days we were on track we ended this memorable formula bharat journey by achieving a rank a 16<sup>th</sup> overall





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### **Loading car in Coimbatore and unloading in Mumbai**

After our quite successful drive at the competition in Coimbatore we loaded the car from the track in a trailer and departed it for Coimbatore. On reaching Mumbai we unloaded it on Ghatkopar highway along with other teams and brought it back to college on 29<sup>th</sup> January 2024. The participating students came back to Mumbai via train on 27<sup>th</sup> January 2024.

### **Recruitment orientation for interested students**

*C22 classroom RGIT*

The team conducted a orientation wherein everyone who was interested in FSAE and motor sports were invited. The team members did the courtesy of briefly explaining the departments in the team and their functioning. Interested students from the college were in attendance.





## **Recruitment interviews**

After successfully conducting recruitment seminar it was time to conduct interviews to form our new team. The candidates that appeared for the interviews were asked basic mechanical, electrical and physics questions. Based on the candidates performance a total of 13 new students were added in the team in various departments

## **Exhibition at Don Bosco Institute of technology**

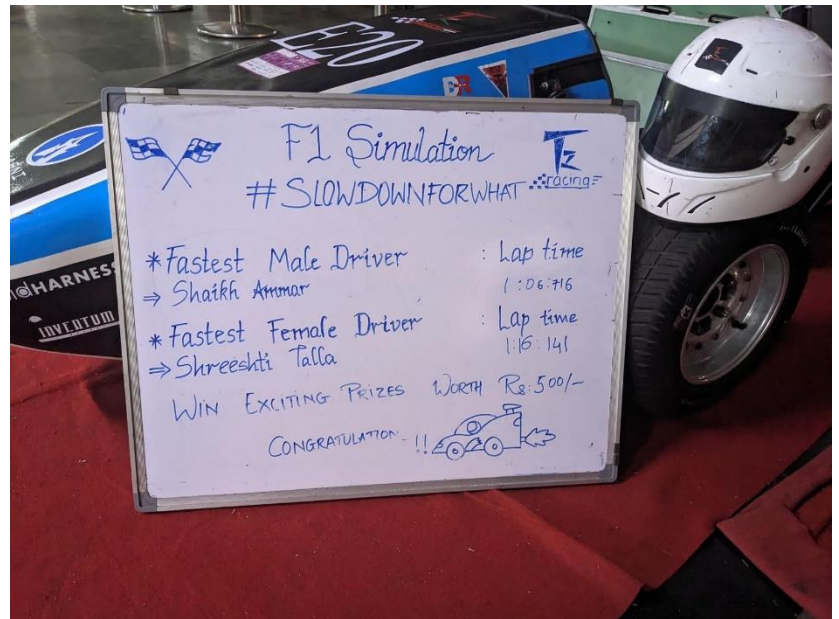
We were requested to exhibit our car at the DBIT's tech fest by DBIT students. A MOU was signed between DBIT and our team with the clauses that food and water to the members travelling with the car would be provided by DBIT and also the rent of vehicle to take the car from RGIT to DBIT and back. After taking permission from our faculty advisor, HOD and college principal the team took the car to DBIT for two days i.e: 29 February and 1<sup>st</sup> March 2024

## **F1 simulation in Synergy**

*College cafeteria*

The team organised a Formula 1 simulation in the college cafeteria in collaboration with the IT student body of college ABIT on 26<sup>th</sup> and 27<sup>th</sup> March for ABIT's fest called Synergy.

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## **Pre-registration for Formula Bharat 2025**

The team completed the pre- registration for formula Bharat 2025 and started preparing for the quiz that was to be attempted on 11<sup>th</sup> may 2024