CSR Proposal

Description

VISHWA is a space sciences and astronomy club of VJTI, which is established in September 2021 with an aim to provide technical opportunities to VJTI students in the field of Astronomy & Space, get international expertise and exposure, participate in relevant competitions & challenges on behalf of the college, educate them regarding the current space race and undertake research-oriented projects for the same to aid VJTI to be at par with parallel premier institutions. We mainly focus on Rocketry, Space robotics and Satellite building projects. Compete in international competitions like IRC, CanSat etc representing VJTI on National and International stage.

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OUR PLAN

ABOUT VJTI

Veermata Jijabai Technological Institute (VJTI) is a state funded college located in Mumbai, Maharashtra, India, and one of the oldest engineering colleges in Asia. Founded in 1887 and formerly known as the Victoria Jubilee Technical Institute. VJTI is an academically and administratively autonomous institute, support by Government of Maharashtra. It is one of the premier engineering institutes in Mumbai and has played a pivotal role in setting up several IITs and NITs across the country.

VISION

" To establish global leadership in the field of Technology and develop competent human resources for providing service to society. "

MISSION

- To provide students with comprehensive knowledge of principles of engineering with a multi-disciplinary approach.
- To create an intellectually stimulating environment for research, scholarship, creativity, innovation and professional activity.
- To foster relationship with other leading institutes of learning and research, alumni and industries in order to contribute to National and International development.

VISHWA VJTI

The Official Collegiate Club of VJTI, Matunga

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IRC (International Rover Challenge)

The flagship competition of the Space Robotics Society, The IRC invites students' participants from all over the globe to take on the challenge of designing and operating rover in Mars simulating conditions. The objective of the competition is to provide students with interdisciplinary Engineering combining practical engineering skills along with soft including business planning and Project Management

Team VISHWA representing VJTI on global stage at recently held SPROS International Space Robotics Week 2025 among top Universities.

Estd in **September 2022**

ACHIEVEMENTS in the span of just 3 YEARS

Rank 16 among 30+ Teams across Globe -2023 -IRC, Presidency University, Bangalore, IN

Rank 14 among 30+ Teams across Globe-2022 - IRDC 2022

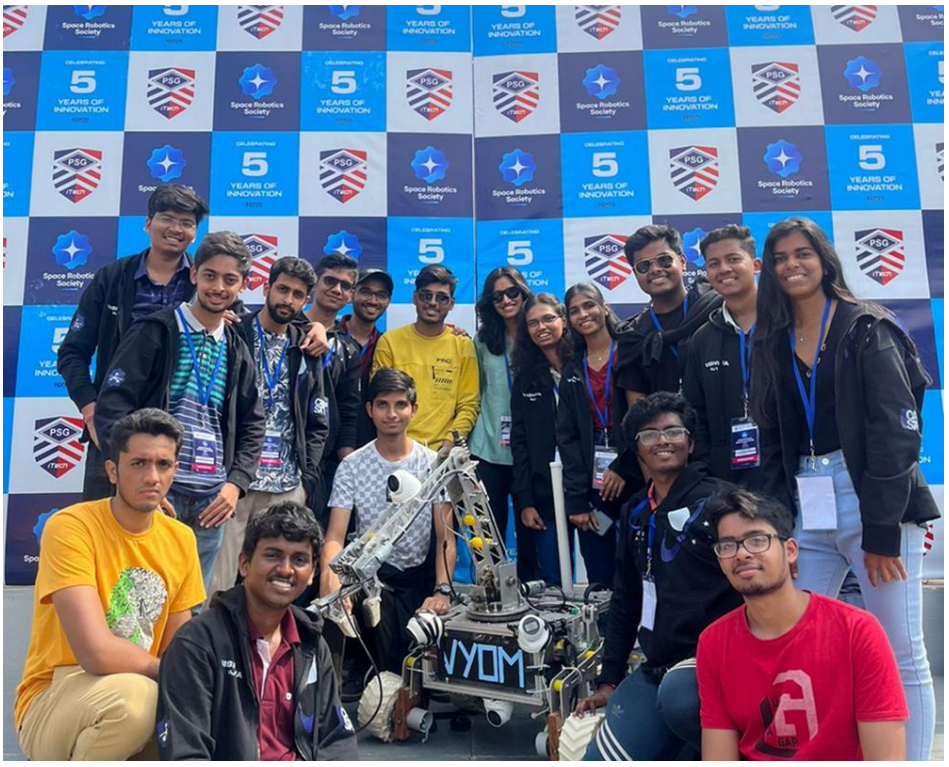
Rank 16 among 50+ Teams across Globe - 2024 - IRC, PSG Itech, Coimbatore, IN

Rank 23 among 100+ Teams across Glob – 2025 –IRC, BITS Pirla Campus, Goa, IN

Team Vishwa at IRC 2023

Our 2023 Rover 'VIHAAN'

Team Vishwa at IRC 2024

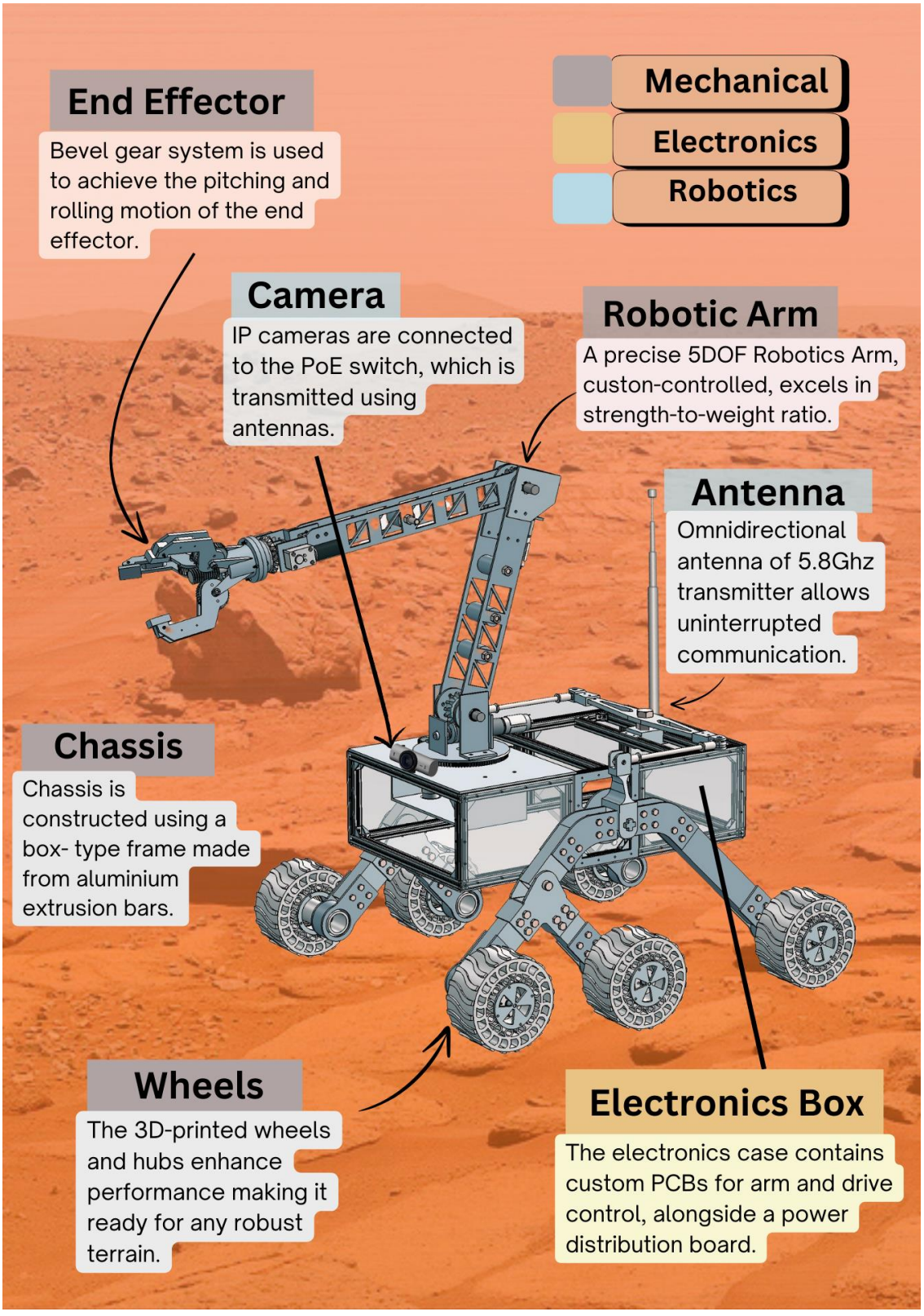


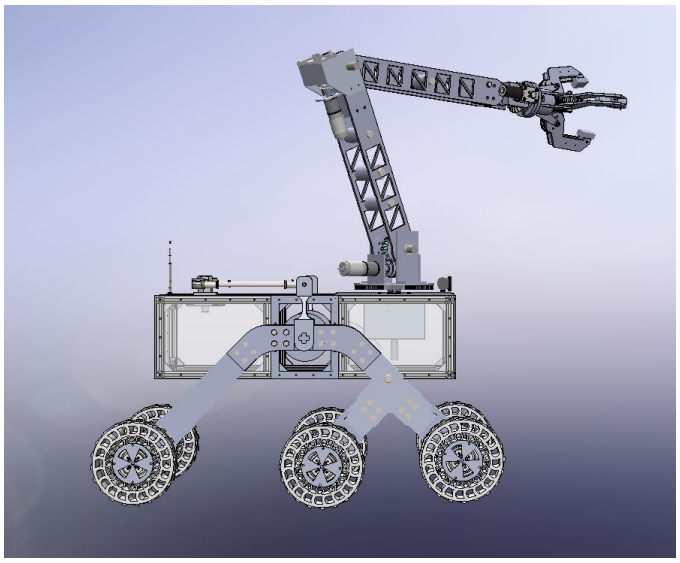
Our 2024 Rover 'VYOM'

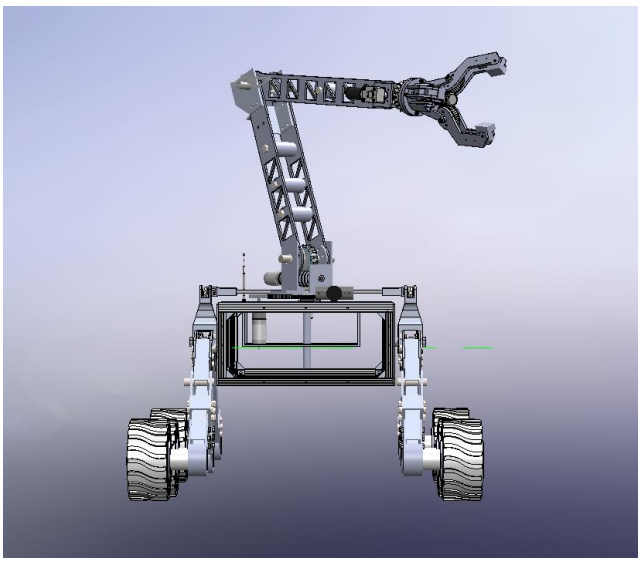
Team Vishwa at IRC 2025

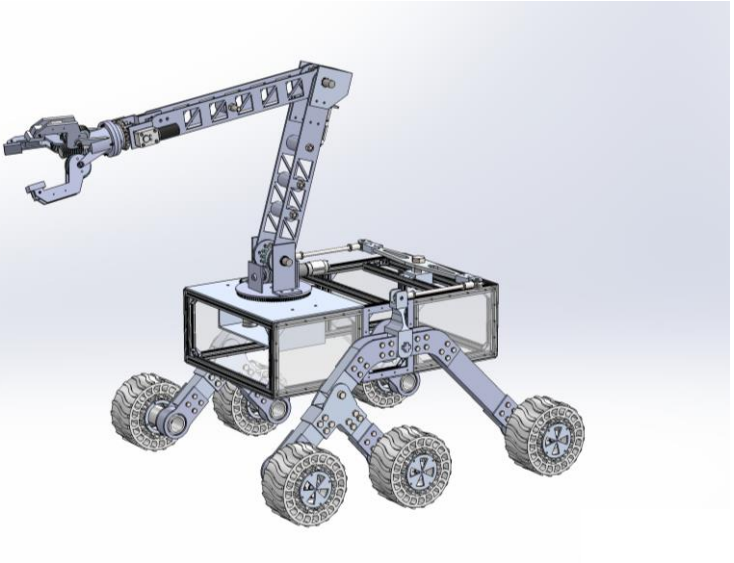
Our 2025 Rover 'VIDHYUT'

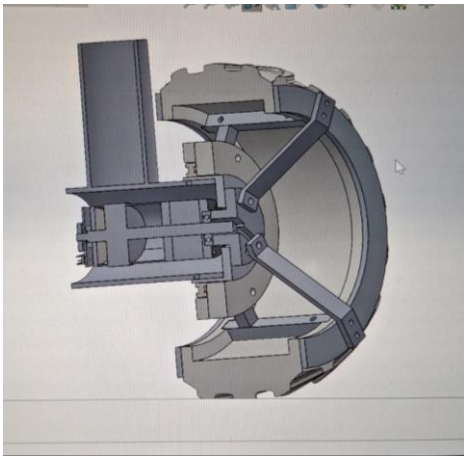
DESIGN & DEVELOPMENT

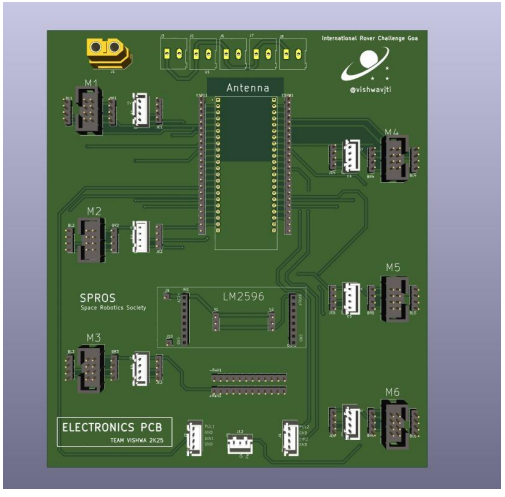


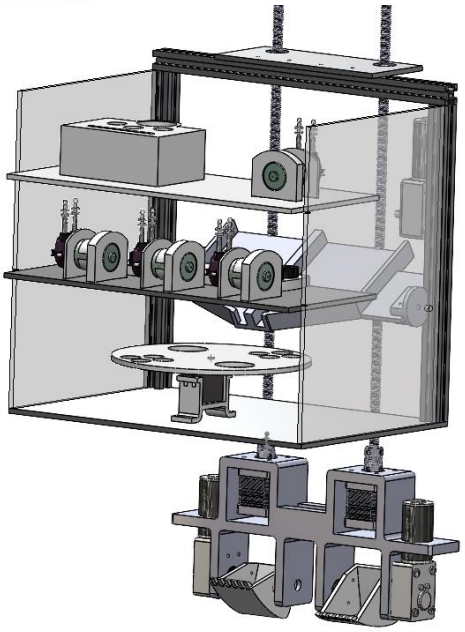









International Rover Challenge Goa
@vishwavijti
Antenna
M1
M2
M3
M4
M5
M6
SPROS
Space Robotics Society
LM2596
ELECTRONICS PCB
TEAM VISHWA 2K25



Problems faced

Vishwa VJTI is located in the institute's heart, the Mechanical Department. Numerous teams have worked in the same location and achieved glory; however, in order to keep up with changing technologies and continue the streak of success we have had, **we must adapt newtechnologies and build new infrastructure.** As a result, we ask that you lend your support to this cause, as it will enable us to improve working conditions by increasing the amount of time spent on actual work rather than fixing peripheralissues.

1. Lack of Ventilation

The inadequate ventilation in the lab creates an uncomfortable and sometimes stifling environment. Without proper ventilation systems or ventilators, maintaining a conducive working atmosphere is challenging, especially during intense working periods. Poor air quality can also affect health and concentration. Additionally, the use of welding equipment in a poorly ventilated space poses significant health risks due to the inhalation of harmful fumes and gases.

2. Limited Power Tools

The lab is equipped with very few power tools, such as only having one grinder. This limitation severely restricts our ability to perform various tasks efficiently and effectively. The lack of essential tools can delay project timelines and reduce the quality of our work.

3. Improper Sitting and Working Furniture

The furniture in the lab is not suitable for prolonged working sessions. The lack of ergonomic chairs and desks makes it uncomfortable for team members to work efficiently, potentially leading to health issues over time. Proper furniture is essential for maintaining focus and comfort during long hours of work. Insufficient Seating Arrangements to accommodate the entire team at once. hinders team meetings and collaborative work sessions, making it difficult to coordinate effectively.

Problems faced

4. **Lack of Power Outlets**

There are insufficient power outlets in the lab, causing inconvenience and delays in our work. With multiple devices and equipment needing power, the scarcity of outlets hampers productivity and requires constant juggling of power sources.

5. **Improper Fixturing Equipment**

Our lab lacks proper fixturing equipment, leading to reduced accuracy andefficiency in our work. This limitation hampers our ability to perform precise operations and impacts the overall quality of our projects. Proper fixturing is essential for maintaining high standards in our work.

6. **Outdated and Broken Bench Vices**

The benches in the lab are old and often have broken lockers, making it difficult to store and organize tools and materials. This disarray contributes to inefficiencies in our workflow and makes the workspace look unprofessional.

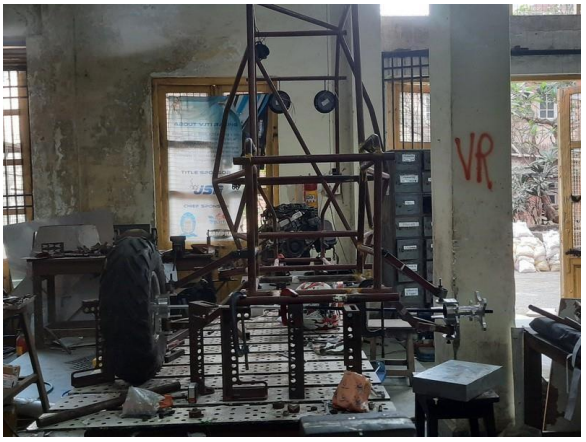
8. **Broken Cupboards**

Many cupboards in the lab are broken, further contributing to the disorder and difficulty in storing essential tools and materials securely. This impacts ourability to keep the workspace organized and can lead to the loss or damage of important items.

9. **Poor Infrastructure leading Poor Security Against Weathering.**

The lab's infrastructure is in poor condition, compromising security and overall working conditions. The tattered state of the facility raise concerns about the safety and security of our equipment and projects. Additionally, the overall working environment is in a sad state due to the deteriorated infrastructure.Pest control has not been addressed, resulting in an increasing number of mosquitoes and mice, which further degrades the workspace. Proper security measures, infrastructure improvements, and pest control are crucial to prevent unauthorized access, theft, and to improve the overall work environment.

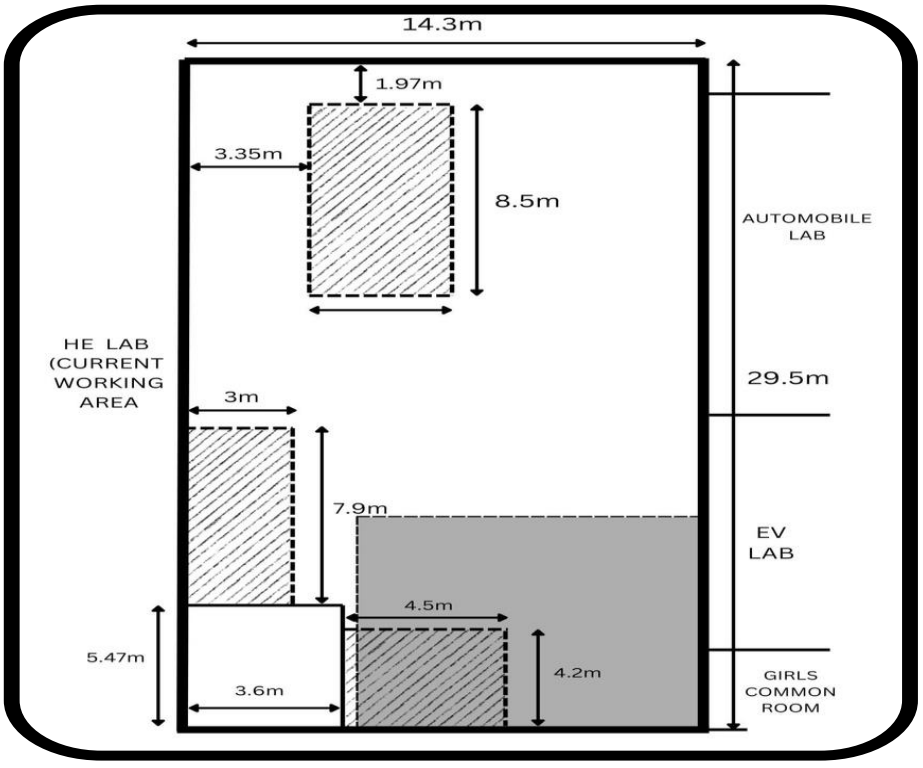
Current Situation of Vishwa VJTI Lab



Scope of Work

With the aim of renovating the area of 4400 sq. ft. this project will create a Lab for efficient and focused work flow. The specific upgrades include:

- Electrical systems, ventilation, and increased work space.
- Creation of dedicated spaces for component storage and a better organized office area for planning and coordination.
- Enhancing machine/tools setup.



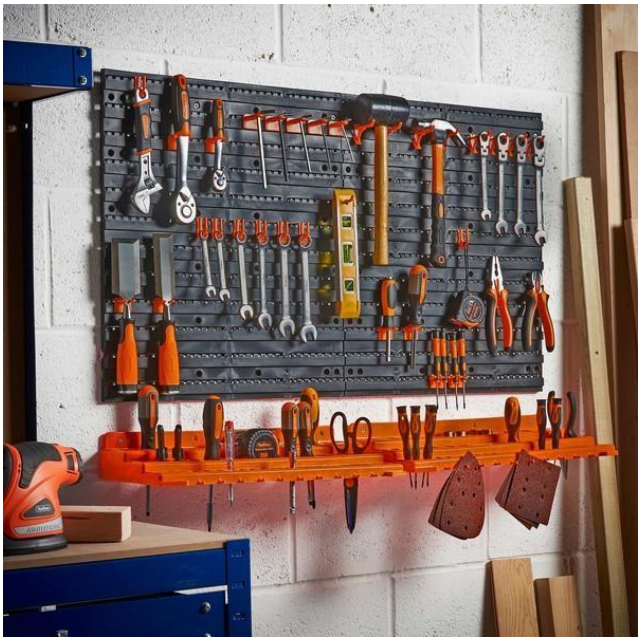
RENOVATION PLAN

Renovation Category	Proposed Upgrades
Infrastructure	Layout Optimization: Redesign the working space for better workflow Painting Tables with Vise (Bench Vise) Wooden Workshop Workbench (approx. 2.5m x 1.2 m) Tool Storage Rack Lights and Fans: for proper lighting and ventilation Doors: For added security Chairs: To increase current seating capacity Water cooler
Tools and Equipment's	Angle Grinders New TIG Welding Setup: to optimize working setup and increase safety 3D Printer, Drill Machine Laser welding unit: For small scale welding facility & avoid outsourcing, Soldering Kit Pliers, Spanners, Mallets and Hammers, Screw Drivers, Cutting tools like drill bits, single point cutting tool compatible with carbon fiber materials Measurement Tools: Digital Caliper, micrometer, deflection gauge, Tachometer, Angle Magnet, Angle scale Cells for developing Li-Ion Battery Pack Software & Electronic components: Monitor, Depth cameras, LIDAR sensors, NVIDIA Jetson AGX Orion for onboard computing of rover, Joystick for wireless control.

EQUIPMENT NEEDS

Without manufacturing our components, our research and validation is incomplete. Furthermore, because we manufacture vehicles every year, we spend a majority of our time with machining tools and prototyping technologies. So, a **vertical drilling machine and a 3D printer** becomes our need of the hour. **3D Printer** – Used to fabricate custom rover components, such as lightweight structural parts, sensor mounts, and enclosures with high precision. **Wooden Workbench** – Serves as a stable platform for assembling, testing, and prototyping rover components, ensuring a controlled workspace for mechanical and electrical integration. **Laser Welding Unit** – Helps in precise welding of metal parts, particularly for the rover's chassis or custom metal joints, ensuring strength and durability. **Monitor** – Used for real-time data visualization, rover control interface, debugging, and monitoring telemetry from the rover's onboard systems. **NVIDIA Jetson AGX Orion** – Acts as the rover's AI computing unit, enabling advanced machine learning, image processing, and autonomous navigation. **LIDAR Sensor** – Provides accurate distance measurements and mapping for obstacle detection, terrain analysis, and autonomous navigation. **Web & Depth Cameras** – Web cameras are used for teleoperation and remote monitoring, while depth cameras enable 3D perception for obstacle avoidance and terrain assessment. **A proper tool storage rack** will make sure that no time is being wasted in arranging the tools daily in lab as there will be a specified place for that storage.

Tool Storage Rack:



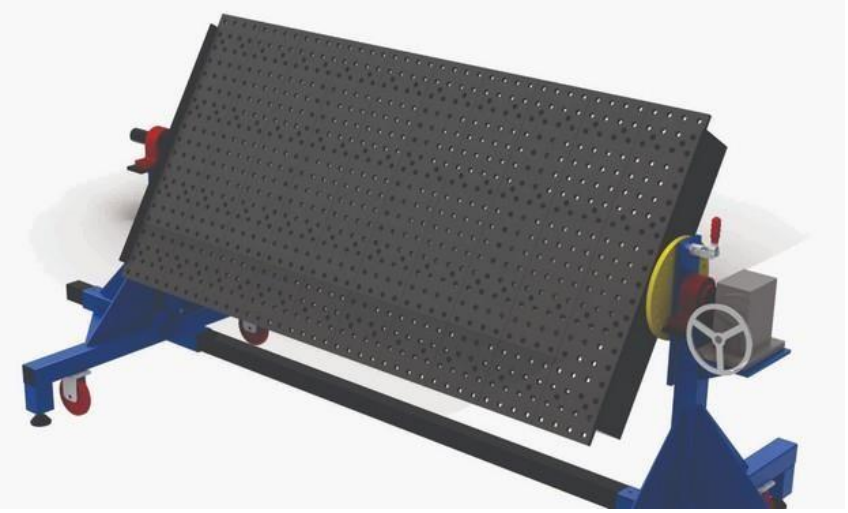
- 50 Piece Wall Mounted Plastic Pegboard
- 13lbs weight capacity and 50 assortedhooks to cater for even the largest tool collection.

3D Printer:

- WOL3D Creality Ender 3 V3 KE 3D Printer
- Can handle Hyper PLA, PETG, ABS, TPU (95A), and ASA filaments
- Dual Linear Shafts on Y-axis and dual X-axis Lead Screws, making each move accurate, steady and frictionless
- This 3D Printer can allow us to create prototype before actual manufacturing and thus allowing us to perform testing.

Monitor, Depth cameras, Jetson AGD orion

Rotating Welding Table (For components fixturing):



- 360 degree rotation
- Comes with 4 swivel castors with breaking system
- Heavy Duty Leveling Feet ensures proper leveling of the table on uneven surfaces.

Measuring instruments

BUDGET-PART A

PART A- Center of Excellence (COE) for Astronomy & Space Science Club

We intend to enhance the facility along with the following industrial equipment through the CSR initiative whose corresponding budget is as follows:

Ground floor for Space Science Club for Heat Engine Lab				
Sr. No.	**Nature of Work**	**Area (Sq. feet)**	**Rate (INR)**	**Approx. budget**
1.	Installation of Standard Flooring	6106.24 Sq. feet	240 Rs/Sq.ft	14,65,497/-
2.	Surface Preparation for Ceiling	6106.24 Sq. feet	172 Rs/Sq.ft	10,50,273/-
3.	Civil Works: Plastering and waterproofing for Vishwa, Automotive, and Aerospace Centers	Entire Lab		6,00,000/-
4.	Electrical Works: Wiring and Lighting Installation	6106.24 Sq. feet		5,00,000/-
5.	Industry oil Painting for Laboratory Interiors	Entire Lab		4,50,000/-
6.	Renovation of Windows and Doors			3,00,000/-
7.	Structural Modifications for Audio-Visual Room Setup	2 rooms of 15 X 56 Sq. ft		10,00,000/-
8.	Development of Dedicated Area for Vishwa Vehicle Research and Testing	15 X 56 Sq. ft		6,00,000/-
9.	Development of Dedicated Area for Aerospace Engineering Design and Research	15 X 40 Sq. ft		6,00,000/-
10.	Modern Furniture for Vishwa Center and Aerospace Center	–		5,00,000/-
11.	Installation of Air Conditioning Units	8 Units		4,00,000/--
12.	Laboratory Graphics, Posters, Wall Decor, and Downlighting for EV, Automotive, and Aerospace Centers			5,00,000/-
13	Architectural Design and Consultation Fees	_		5,00,000/-
14	Administrative Overheads	-		5,00,000/-
15	Branding and Marketing Initiatives			1,00,000/-
Total				**90,65,770/-**

BUDGET-PART B

PART B- Student Activity Excellence Centre for Thermal Laboratory

Mezzanine Floor for space science club for Heat Transfer Lab				
Sr. No.	**Nature of Work**	**Area (Sq. feet)**	**Rate (INR)**	**Approx. budget**
1.	Installation of Standard Flooring	1830 ft Sq. feet	240 Rs/Sq.ft	4,39,200/-
2.	Surface Preparation for Ceiling	1830 Sq. feet	170Rs/Sq.ft	3,11,100/-
3.	Civil Works: Plastering and waterproofing	Entire Lab		3,00,000/-
4.	Electrical Works: Wiring and Lighting Installation	1830Sq. feet		2,00,000/-
5.	Industry oil Painting for Laboratory Interiors	Entire Lab		2,00,000/-
6.	Renovation of Windows and Doors	6 Windows +2 Doors		2,00,000/-
7.	Structural Modifications for Audio-Visual Room Setup	1 room of 23 ft by 80 ft Sq. ft. each		1,00,000/-
8.	Modern Furniture			2,00,000/-
9.	Installation of Air Conditioning Units	3 Units		2,00,000/--
10.	Laboratory Graphics, Posters, Wall Decor			2,00,000/-
11	Architectural Design and Consultation Fees	_		1,50,000/-
12	Administrative Overheads	-		2,00,000/-
13	Branding and Marketing Initiatives			2,00,000/-
Total				**29,00,300/-**

BUDGET-PART C

PART C- Student Activity Innovative Centre

Open Space				
Sr. No.	**Nature of Work**	**Area (Sq. feet)**	**Rate (INR)**	**Approx. budget**
1.	Surface Levelling and Concreting (length=100 ft and width=50ft)	5000 Sq. feet	80 Rs/sq. ft	4,00,000/-
2.	Quota Flooring (Ready-made Polish quota 2 by 2 ft.)	5000 Sq. feet	110 Rs/Sq. ft	5,50,000/-
3.	Removing and demolishing of existing work including tank, Crane hook frame	Entire Space	20 Rs/Sq. ft	1,00,000/-
4.	Dome Shape Structure 100ft by 50ft and height =32 ft (Includes: I-section, C-channel, double I-section)	Entire Space	800 Rs/Sq.ft	40,00,000/-
5.	Electrical Works: Wiring and Lighting, Giant Fan (HVLS) (3 No.)	Entire Lab		2,00,000/-
6.	Seating Arrangement in open space	500 sq. ft		1,00,000/-
7.	Water cooler	1		30,000/-
Total				**53,80,000/-**

BUDGET-PART D

We intend to enhance the facility along with the following industrial equipment through the CSR initiative whose corresponding budget is as follow

Equipment Requirements of VISHWA VJTI under CSR initiative

Sr No.	Requirement	Quantity	Specification	Unit Price	Total Price
1	Digital Vernier Caliper	2	Mitutoyo, range-200mm, accuracy-0.05mm	6,000	12,000
2	AC/DC Tig Welding setup	1	Max output current-200Amp	40,000	40,000
3	Portable tool box	1	Stainless Steel with atleast 5 comparments	2,000	2,000
4	Combination Spanner set	1	Range-6mm to 32mm	2,500	2,500
5	Tool Set	1	Minimum Required items- Screw drivers, adjustable wrench, plier, tester, hammer,	2,500	2,500
6	Platform Weighing Scale	1	Minimum weight capacity-100kg	10,000	10,000
7	Bench Drilling Machine	1	Minimum table size-300mmX300mm, preferable speed 2000rpm	8,000	8,000
8	Drill Press Vice	1	Compatible with the bench Drill	3,000	3,000
9	Extension	2	Minimum 4 sockets	600	1,200
10	Soldering set	1	YIHUA 853D 3-in-1 Rework Soldering Station with 30V 2A DC Power Supply	12,000	12,000
11	ANgle Grinder	1	Bosch Mini Angle Grinder, Disc 4 inch	3,000	3,000
12	Welding Helmet	1	Ingco 110×90×9mm Auto Darkening Welding Helmet AHM008	2,000	2,000
13	Wooden Workshop workbench	1	MDF workbench with extra shelving, vice, wall mounting; dimensions-4ftX8ftX$ft	1,00,000	1,00,000
14	Study Desk/Table	1	Rectangular wooden table with minimum seating capacity of 15	40,000	40,000
15	Multimeter	1	HTC Instruments DM 98 WITH TRMS (3/4) Digital 6000 Counts Digital Multimeter (Yellow, Black 4000 Counts)	1,500	1,500
16	3D Printer	1	Flashforge Creator 4 series, Printing size: 400mm*350mm*500mm, Type : Creator 4-A Filament:PLA / PETG / PC-ABS / PAHT / ABS /ASA / PP / PA / PC Extruder temperature: 320℃ Maximum chamber heating temperature: 65℃ Printing speed: 200mm/s	4,50,000	450000
17	NVIDIA Jetson AGX Orin	1	NVIDIA Jetson AGX Orin Developer Kit	2,09,999	209,999
18	Unitree LiDAR	1	Unitree 4D LiDAR L2	53,525	53,525
19	Intel Realsense camera	1	Intel Realsense D455 Depth Digital Camera With Imu (Usb Type-C Port)	64,990	64,990

20	Gantry Crane	1	With a minimum load carrying capacity of 100kg	80,000	80,000
21	Rotating welding table	1		40,000	40,000
22	Motor Driver	10	Cytron Motor Driver MDD20A	3,000	3,000
23	STM32	5	STM32 nucleo board	2,000	10000,
24	Planetary gear motor	10	Orange Planetary Gear Motor	6,000	60,000
25	PCBs	-		30,000	30,000
26	Adjustable power supply		SMPS based Adjustable Power Supply 30v 40A	46,000	46,000
27	PC	1	HP PC	60,000	60,000
28	Transmitter and receiver	-	Fly-sky FSi6 transmitter receiver	6,000	6,000
29	Wireless HDMI video transmitter receiver	-		30,000	30,000
30	Soldering station	1		10,000	10,000
31	Linear Actuator	5		6,000	30,000
32	Raspberry Pi	1	Raspberry Pi 5B 16gb	13,000	13,000
33	Jetson Nano case	1		3,000	3,000
			Total A		**13,29,214/-**

Equipment Requirements of Aero VJTI under CSR initiative

Sr No.	Requirement	Specification	Quantity	Total Price
1	BOSCH Professional GWS 800 Corded Electric Angle Grinder	The BOSCH Professional GWS 800 is a powerful 800W corded angle grinder designed for efficiency in cutting and grinding tasks. Used for grinding external aircraft surfaces	3	1700
2	Radiolink AT10 II 2.4GHz 12CH RC Drone Transmitter	The Radiolink AT10 II 2.4GHz 12CH is a high-end RC transmitter primarily designed for controlling drones, helicopters, fixed-wing aircraft, and other RC vehicles.		40,000
3	Pixhawk Cube Orange+ FC with ADS-B Carrier Board	The Pixhawk Cube Orange+ Flight Controller (FC) paired with the ADS-B Carrier Board is a powerful and advanced flight control system designed for professional drones, UAVs, and other autonomous vehicles.	2	30000
4	Radiolink SE100 GPS with GPX holder	The Radiolink SE100 GPS module with the GPX holder is designed for providing accurate positioning and telemetry data for drones and other remote-controlled (RC) vehicles.	2	4000
5	Bosch GEX 34-150 Heavy Duty Electric	The Bosch GEX 34-150 is a heavy-duty electric random orbit sander featuring a powerful 340W motor for effective sanding on various surfaces.	1	14000

	Random Orbit Sander			
6	Bosch GSB 180-LI 18V Cordless Impact Drill with X50Ti Drill Bit Set	The Bosch GSB 180-LI is an 18V cordless impact drill offering high performance and versatility for drilling and screwdriving tasks. Paired with the X50Ti drill bit set, it provides a comprehensive solution for various materials.	2	28000
7	Bambu Lab X1 Carbon Combo 3D Printer	The Bambu Lab X1 Combo 3D printer is a user-friendly, high-speed 3D printer designed for precision and reliability. With advanced features like AMS support for multi-material printing and a compact design, it's ideal for both beginners and experienced makers.	1	2,00,000
8	Herelink HD Video Transmission System v1.1	The Herelink HD Video Transmission System v1.1 is a sophisticated long-range transmission solution designed for UAVs (drones) and other RC vehicles.	1	85,00,000
9	Bosch GRO 12V-35 (Solo) Rotary Dremal Tool Kit	The Bosch GRO 12V-35 (Solo) is a versatile rotary tool kit designed for precision tasks like grinding, cutting, and polishing. Its compact, cordless design and powerful 12V motor make it ideal for intricate projects and DIY enthusiasts.	1	19500
10	Polymaker Silk PLA Filament 1.75mm PLA Lime Green Filament	Polymaker Silk PLA Filament in Lime Green is a high-quality 1.75mm filament known for its glossy finish and vibrant color. Helps in rpinting aircraft parts due to good strength to weight ratio.	6	17500
11	Tesseract Premium ABS 1.75mm 3D Printing Filament	Tesseract Premium ABS 1.75mm filament is a durable and versatile material designed for high-quality 3D printing. It provides excellent strength, heat resistance, and a smooth finish, making it ideal for functional parts and prototypes.	6	6000
12	Bosch 06019H21L1 3.6 V Professional Screwdriver	The Bosch 06019H21L1 is a compact 3.6V cordless screwdriver with lithium-ion technology, offering adjustable torque and an ergonomic design for professional tasks.	2	5200
13	Serplex® 32Pcs 3D Print Tool Kit 3D Print Tool Accessories Kit	The Serplex® 32Pcs 3D Print Tool Kit is a comprehensive accessory kit for 3D printing, featuring 32 tools including pliers, tweezers, and spatulas, ideal for cleaning, finishing, and maintaining 3D prints.	2	4000
14	BOSCH All-in-One Hand Tool Kit	The BOSCH All-in-One Hand Tool Kit is a versatile set designed for various DIY and repair tasks, featuring essential tools like screwdrivers, wrenches, pliers, and a hammer.	2	5200
15	WISKA 3-in-1 Digital Tape Measure Auto Electronic Measuring Tool	The WISKA 3-in-1 Digital Tape Measure is an auto electronic measuring tool that combines a traditional tape measure, a laser measure, and a string measure in one device.	2	7200
16	Aerospace 300 mm Digimatic	The Aerospace 300 mm Digimatic Vernier Caliper is a precision measuring tool designed for accurate internal,	2	6000

	Vernier Caliper by Aerospace	external, depth, and step measurements up to 300 mm.		
17	HP Color Laser 150nw Printer	The HP Color Laser 150nw is a compact wireless color laser printer designed for small offices or home use. It offers high-quality color printing, supports mobile printing, and features both Wi-Fi and Ethernet connectivity for easy network integration.	1	35500
18	Creality Falcon 2 40W Laser Engraver and Cutter Machine	The Creality Falcon 2 40W Laser Engraver and Cutter is a high-powered machine designed for precision engraving and cutting on various materials like wood, acrylic, leather, and metal.	2	1,43,000
19	INGCO 7 Pcs Pliers Set, CR-V, Labor-saving Structural Design, Pliers	The INGCO 7 Pcs Pliers Set features high-quality pliers made from CR-V (Chrome Vanadium) steel, designed for durability and strength	2	4600
20	STANLEY 99-059 Metric Tool Kit for Automotive Use (Kit of 132 Pcs)	The STANLEY 99-059 Metric Tool Kit is a comprehensive automotive tool set containing 132 pieces, designed for a wide range of repair and maintenance tasks.	1	16000
21	Yuzuki Stainless Steel Vernier Digital Height Gauge	The Yuzuki Stainless Steel Vernier Digital Height Gauge is a precision tool for accurate height, depth, and length measurements	1	13700
22	MAVOTANK Digital Outside Micrometer Electronic Micrometer Gauge	The MAVOTANK Digital Outside Micrometer is a precision tool designed for measuring external dimensions up to 25 mm.	2	6000
23	Plusivo Soldering Iron Kit	The Plusivo Soldering Iron Kit is a comprehensive toolset for electronics work, DIY projects, and repairs.	3	3000
		Total B		**6,95,1000/-**
		Total A+B=		**20,24,314/-**

Grand Total (PART A+B+C+D)

=90,65,770+29,00,300+53,80,000+20,24,314

=1,93,70,384/-

One Crore Ninety-Three Lakh Seventy Thousand Three Hundred eight four only

IMPACT

BENEFITS AND ADVANTAGES

- This Equipment will be situated in the Heat Engine lab where Vishwa works, Mechanical Department which is accessible to all the students. The new 3D printer will **revolutionize theprototyping process**, allowing for the rapid creation of complex parts and materials that enhance vehicle performance. The vertical drilling machine will **improve the precision and quality of component manufacturing**.
- By replacing outdated tools and machinery with advanced equipment, the team can focus more on actual work rather than fixing peripheral issues. This **increases the productive time** available for design, development, and testing. It will provide a
- **platform** for the students to build their **innovative projects** along with a supportive and healthy community for **discussion and technical support.**
- Redesigning the lab space with proper lighting, improved ventilation, and necessary safety measures will create a **safer working environment**, reducingthe risk of accidents and injuries.
- This facility will be used for **educational / research purposes** making it **accessible even post-college hours and holidays to interested personnel.**
- By collaborating with industrial-level projects, it will serve as a bridge to close the gap between industry and academia. The facility will **assist students in upscaling their skills** in response to the current **industry demand.**
- It will **support the Make-In-India** initiative by generating and using indigenous technologies and solutions that will contribute to the growth of the larger society.
- The facility will contribute to the research initiative, **bolster VJTI's NIRF ranking, and expand its global reach.**

GOALS

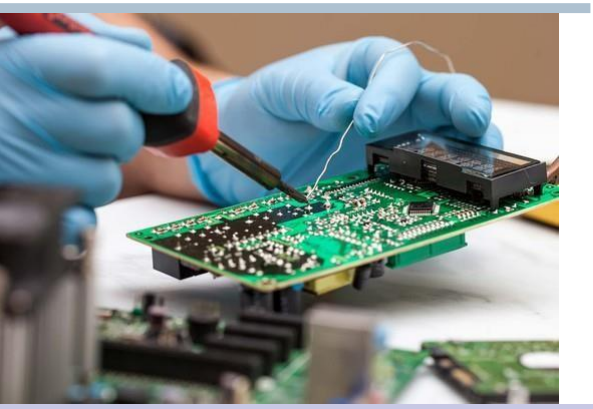
Our Goal with this equipment is to expand the reach and opportunities provided by Vishwa VJTI, in turn helping institute to bridge the gap between theoretical and practical experiences.

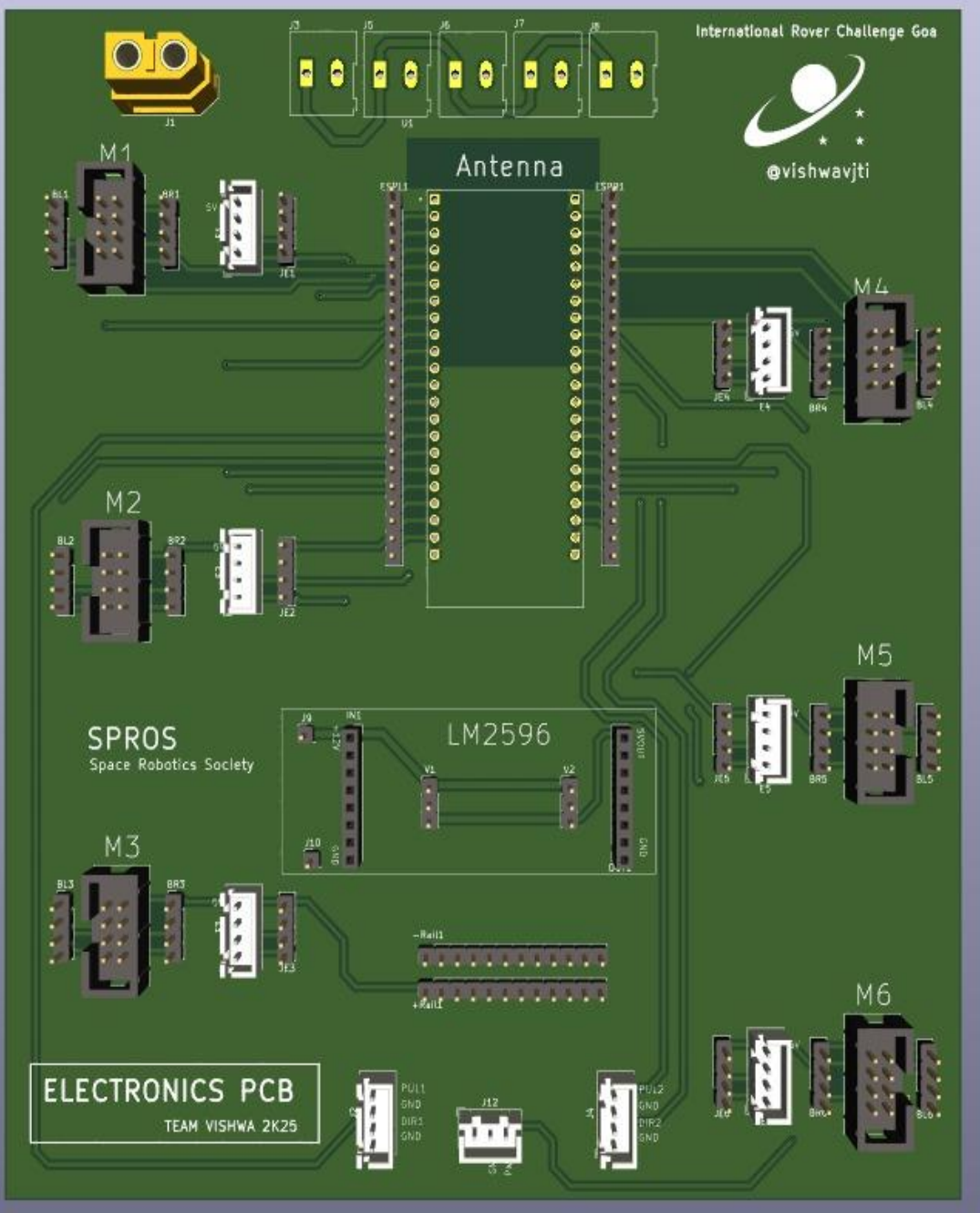
PERFORMANCE IMPACT

- A proper tool storage rack will streamline tool management, ensuring that tools are readily available and reducing time wasted on arranging them. This organization boosts **overall productivity**.
- **More time** will be used in **Research and Development instead** of dedicating that time to manufacturing and concerned logistics.
- Graduate and post-graduate students can use these machines to conduct their research, thus helping the institute in **creating a research-focused environment.**
- India is advancing in space robotics with upcoming **lunar, Martian, and Venusian missions**, robotic assistants for **Gaganyaan**, and **autonomous AI-driven rovers**. Future plans also include **on-orbit servicing, space debris removal, and reusable launch systems**. Young innovators can contribute through **robotics competitions, academic research, startups, internships with ISRO, and AI advancements**. Engaging in these areas will help India lead in space robotics and innovation.

IMPACT ON ACTIVITIES

- **Number of workshops** conducted per year.
- **Number of Seminars and Talks** conducted per year
- **Increase in mentorship programs** for freshmen and sophomore students
- **Increase in involvement** of postgraduate students in research.
- **Participation in International and National** level engineering competitions in the field of motorsports, electric vehicles, and sustainability.




International Rover Challenge Goa
@vishwavjti
Antenna
M1
M2
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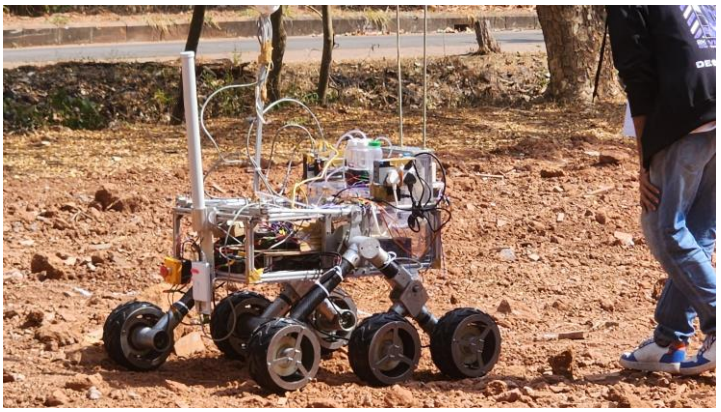
SPROS
Space Robotics Society
ELECTRONICS PCB
TEAM VISHWA 2K25

- Participation of students in innovative and research-based projects.



EVENTS CONDUCTED

'PRAGYAN'- An event hosted by Vishwa to celebrate the success of Chandrayaan-3

Rover exhibition in the quadrangle

Astronomy exhibition in textile hall.

Club orientation for freshers

An inspiring meet with the Honourable former ISRO Chairman Dr. A.S.Kiran Rao

SOCIAL IMPACT

In order to advance automotive innovation, research, and allied areas, the new 3D printer will be beneficial to all students of VJTI as a whole. Additionally, it will assist in establishing standards for other engineering programs at the **University of Mumbai**. It will affect society in the following ways:

It will promote scientific research and development as well as a stable academic future.

- Encourage student innovation by having them work on ambitious projects by rapid prototyping their ideas.
- **Promote skill development under the "Make in India" initiative of the Government of India.**
- Better hands-on experience and opportunities for the following demographics of students who study at VJTI where roughly **51% are socially challenged and 26% belong to economically backward sections of oursociety.**

Programs	No. of Female Students	Total Students	Economically Backward	Socially Challenged (SC+ST+OBC)
UG [4 Years Program]	861	2591	692	1320
PG [2 Years Program]	159	514	152	196

SKILL DEVELOPMENT

- The objective of VJTI Racing is to develop the abilities necessary to accomplish the Central Government's "Make in India" objective for research. Students' skills
- are honed through practical experience in real-world projects by participating in SPROS International Competitions competitions.
- Students are also encouraged to take on challenging projects in various domains in order to gain a holistic set of skills.

ACHIEVEMENTS

E-BAJA 2024
- AIR 1 in Overall Statics
- AIR 1 in Sales Presentation
- AIR 5 in Design
- AIR 15 in Cost Report

ATVC 2024
- Overall AIR 3 - EV
- AIR 1 in Innovation
- Runner up in Business Plan
- AIR 3 in Design Presentation

INDIAN KARTING RACE 2023
- AIR 5 in Electric Vehicles
- AIR 1 in Acceleration, Business Plan & Cost Report
- AIR 2 in Design - EV
- AIR 3 in Innovation - EV

SAE e-BAJA 2023
- Overall Rank 18 out of 125 colleges
- 2nd in Innovation category for PCB design and low voltage circuit implementation

ATVC 2023
- 1st in design category for off roach electric vehicles

SAE e-BAJA 2022
- Overall Rank 27 out of 90 colleges
- 1st in electric All-Wheel Drive vehicles

SAE BAJA 2021
- Overall Rank 2 out of 110 colleges
- 6th in Sales and Business presentation

SAE BAJA 2020
- Ranked 26th among all the participating teams in India
- 6th in Virtual Round

Enduro Student India
- 7th Rank in the Marketing Event
- 10th Rank in the Design Challenge
- 14th in the Acceleration Event

SAE BAJA 2018
- 1st in Sales presentation
- 3rd in Virtual evaluation
- 4th in Cost event

SAE BAJA 2017
- Secured Overall 23rd National Rank
- 4th in Suspension & Traction Event
- 9th in Sales Presentation Round
- 10th in Design Presentation Round
- 14th in Acceleration Round

ESVC 2016
- Ranked 1st in Acceleration Event
- Ranked 5th in Business Presentation Round
- Ranked 7th in Maneuverability Event
- Overall Secured 7th amongst all teams all over India

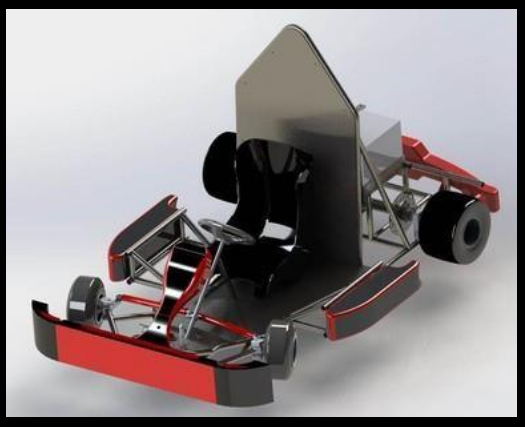
SAE BAJA 2015(SOUTH AFRICA)
- 1st Rank among all international teams.
- 1st Prize in Acceleration Event.
- 1st Prize in Maneuverability Event.
- 1st Prize in Hill Climb Event.
- 1st Prize in Dynamic Performance.
- 2nd Prize in Static Design.
- 2nd Prize in Sales Presentation.

ECO-KART 2015.
- Winners of Safest Kart Award.
- Winners of Best Marketing Scope Award.
- Winners of Most Synchronized Team Award.
- Ranked 2nd among all participating teams in India.

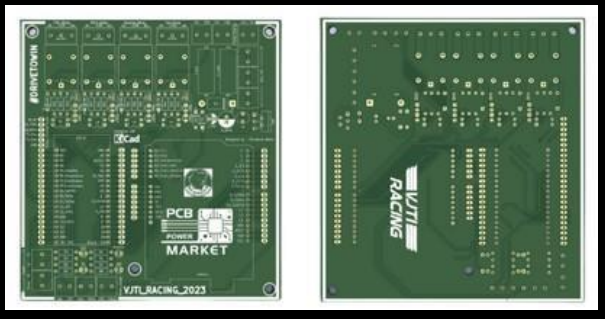
SUPRA 2014
- Winners of Business Presentation Award.
- Ranked 1st in Mumbai.
- Ranked 12th among all participating teams in India

SAE BAJA 2012
- Overall rank 35, Raftaar award winner.

VJTI RACING




VJTI
VJTI RACING
RAMPRA
ALF
S.N.Engineering
VICTORIA DIGITAL
V-EXCEL
77


PCB
MARKET
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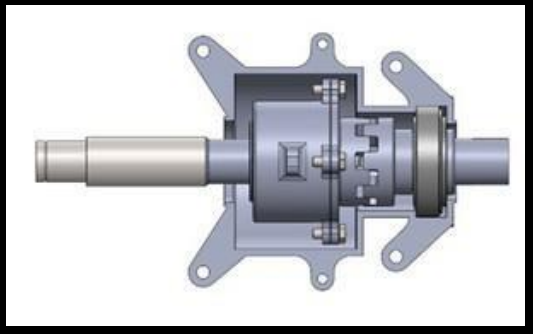
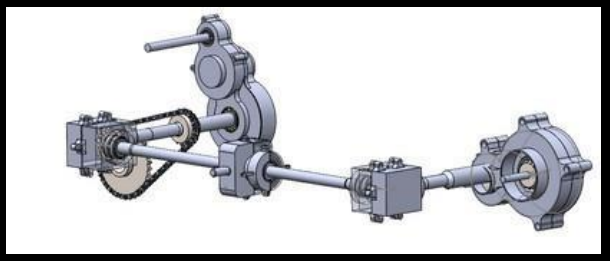
VJTI RACING

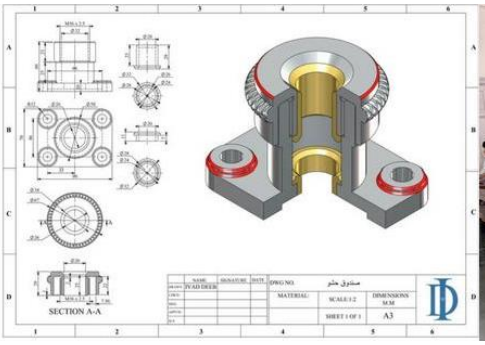




WORKSHOPS

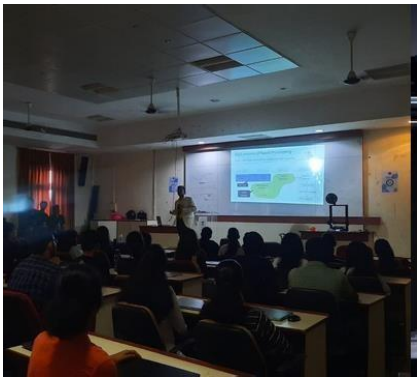
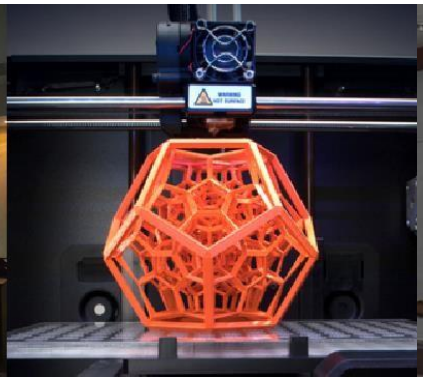
SOLIDWORKS

In the **SOLIDWORKS** session, participants learned how to create 2D sketches, which are the basis for all 3D models. Using SolidWorks' various functions, including extrude, revolve, sweep, loft, and fillet, is part of the workshop. **The students learnt how to put together various components to construct intricate mechanical devices thanks to the workshop.** As the seminar draws to a close, participants can work on quick design tasks to put their newly acquired knowledge into practice. **This workshop, which serves between 100 and 150 freshmen annually**, is the foundation of VJTI Racing's ideas.

3D PRINTING

An exceptional chance to explore the intriguing realm of additive manufacturing is provided to participants in the **3D PRINTING program**. Students learn about **3D printing materials, techniques, and design issues** through practical exercises and expert coaching. In addition to giving participants a thorough understanding of 3D printing technology, this workshop encourages them to use this cutting-edge manufacturing technique for a variety of applications. This creates a feeling of empowerment and excitement about the possibilities that 3D printing presents.


IGNITION

The goal of the **IGNITION** workshop is to **introduce students to the working environment of a collegiate racing club** while providing them with a thorough understanding of all the different aspects involved, from team dynamics to vehicle engineering and maintenance. Students in the workshop were able to participate in interactive Solidworks, Ansys, and Hyperworks sessions. **The session included real demonstrations of welding, profiling, and other manufacturing operations in addition to providing an overview of data collecting technologies**. Through conversations with the members of theracing club, the students might learn a lot about the world of collegiate racingclubs and even develop an interest in joining.

CATIA

CATIA software, a robust CAD tool, has significantly impacted our students' educational paths. As a premier software suite for product design and innovation, CATIA has empowered our students with essential skills andexpertise to thrive in the demanding fields of engineering and design. By engaging in hands-on practice with CATIA, students have refined their **abilitiesto conceive, simulate, and implement designs with remarkable accuracy and effectiveness**. This practical experience not only enriches their academic growth but also readies them for the practical demands of the professional world, nurturing a generation of skilled and inventive professionals.

UNITYSUMMIT

In alignment with our **commitment to fostering leadership and collaboration** within our academic community, we orchestrated a **formal meeting comprising third-year, second-year, and first-year students.** This distinguished event served as the official platform for **the announcement of the newly elected Student Senate and the appointment of sector heads** overseeing various activities in the club. The gathering was meticulously structured to facilitate interaction and mentorship across different academic levels, ensuring a **seamless transfer of knowledge and experience**. By convening students at various stages of their academic journeys, we aim to cultivate a cohesive and dynamic environment that promotes leadership, innovation, and collective growth.

VR ACCELERATE fi0fi4

VR Accelerate is a mentorship program designed for first- and second-year institute students. It focuses on facilitating research projects in groups of five students, each guided by senior members of the club. **Projects span diverse areas such as Electronics, Powertrain, Manufacturing, Composites, FEA, Heat Transfer, and CFD.** The program aims to **equip students with the skills to initiate, conduct, analyze, and conclude research projects effectively.** VR Accelerate was launched in June 2023 to provide participants with comprehensive hands-on learning experiences.

AUTOSHOW

AutoShow is a celebration of creativity and passion for cars. The event seeks to inspire the next generation of automotive engineers and enthusiasts by igniting their interest with its engaging vehicle displays, interactive workshops, and industry insights.
A wide range of people, including students and motor aficionados, attended the event, which was held on the VJTI campus.
A remarkable collection of motorcycles and cars were on display at the event. The chance to see rare automobiles up close, such as a R8 LMX 1/2, Mustang, G Wagon, and GT4, gave attendees a new appreciation for the engineering and craftsmanship of these amazing machines. Attendees could engage with car owners and industry professionals, who could offer insights into the vehicles on show.

The introduction of **Team Motorbreath 2023's All Terrain Vehicle** served as the event's focal point. The maiden drive of the ATV, which captivated the audience, came right after the launch.
The VJTI Racing-organized AutoShow was a huge success, inspiring and captivating attendees with the world of cars.

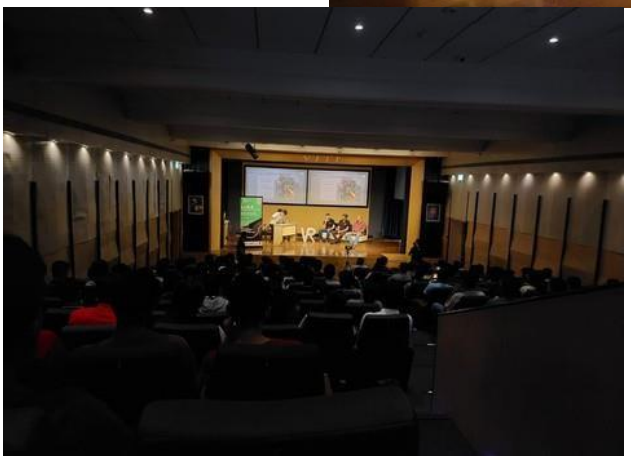
RACING PODCAST

We organized an **exhilarating racing podcast event** in our college auditorium, attracting an **enthusiastic audience of approximately 150 attendees**. This dynamic event served as a platform for racing enthusiasts to delve into the thrilling world of motorsports, featuring insightful discussions and expert commentary from prominent figures within the racing industry.

Our distinguished guests included **Omkar Rane and Shubham Sangodkar**, both renowned for their significant contributions to the field of motorsports. **Omkar Rane, a seasoned racer and technical analyst**, shared his extensive knowledge and experiences from the track, providing attendees with a deep understanding of the technicalities and nuances of racing.

Shubham Sangodkar, a respected motorsport journalist and commentator, offered valuable insights into the evolving landscape of the racing world, highlighting emerging trends and pivotal moments in recent racing history.

The podcast not only captivated attendees with its engaging content but also fostered a sense of community among participants who share a passion for speed and competition. This successful event underscored our commitment to promoting diverse and enriching experiences within our college community, **fostering a culture of knowledge sharing and engagement among students and enthusiasts alike.**



SUSTAINABILITY

At VJTI Racing Club, our development is built on the foundation of **sustainability**. We align our goals with various **national initiatives** to promote sustainable practices within the automobile sector. Our commitment to sustainability is reflected in the following areas:

1. **Faster Adoption and Manufacturing of Hybrid and Electric Vehicles** (FAME) :

Our Commitment: By building electric All-Terrain Vehicles (eATVs) for national and international competitions, we contribute to the goals of the FAME India Scheme. Our projects promote the adoption of electric vehicles, reducing dependency on fossil fuels and lowering emissions. This initiative not only aligns with the FAME India Scheme but also demonstrates our dedication to sustainable transportation solutions.

2. **Bureau of Energy Efficiency** (BEE) :

Our Commitment: We adhere to BEE's energy efficiency standards in the design and manufacturing of our eATVs. This ensures our vehicles are energy efficient, contributing to reduced emissions and promoting sustainability.

3. **Automotive Research Association of India** (ARAI) **:**

Our Commitment: Collaborating with ARAI, we focus on research and development in sustainable automotive technologies. This partnershipenhances our technical expertise and aligns our projects with global sustainability standards.

4. **National Electric Mobility Mission Plan** (NEMMP)**:**

Our Commitment: The NEMMP 2020 aims to achieve national fuel security by promoting electric vehicles (EVs) and hybrid vehicles. By participating in eATV competitions, we contribute to the objectives of NEMMP 2020 by advocatingfor EV technology, reducing greenhouse gas emissions, and promoting innovation in electric mobility.

SUSTAINABILITY

To ensure our commitment to sustainability is comprehensive and impactful, we also focus on effective **resource management** within our club. Proper resource management not only enhances our operational efficiency but also supports our environmental goals. Here are the steps we take to manage our resources effectively:

Effective Resource Management

- Resource Selection: All resources will be chosen with the environment and sustainability in mind. We commit to reusing and recycling as many resources as possible to minimize waste.
- Equipment Management: Users of our facility equipment will enter their information into a database and ensure the equipment is returned in good condition. This helps in tracking and maintaining our resources efficiently.
- Sustainable Practices: We incorporate sustainable practices in our daily operations, such as reducing energy consumption, using eco-friendly materials, and managing waste responsibly.

Mentoring and Talent Development

- Student Involvement: Students contributing to our projects will be appointed to the working committee, ensuring a continuous transfer of knowledge and skills.
- Advisory Committee: The ex-committee will advise the current committee, and new students will receive guidance to secure industry opportunities, fostering lifelong contributions to the Society.

Sustainable Design Practices

- Eco-Friendly Materials: We prioritize the use of eco-friendly and sustainable materials in our designs and manufacturing processes.
- Lifecycle Assessment: We conduct lifecycle assessments of our products to understand and minimize their environmental impact from creation to disposal.
- Design for Disassembly: Our designs consider ease of disassembly, allowing for easier recycling and repurposing of components at the end of their lifecycle.

SUSTAINABILITY

Sustainable Procurement

- Ethical Sourcing: We ensure that all our suppliers adhere to ethical and sustainable practices. This includes sourcing materials from environmentally responsible vendors.
- Local Sourcing: We prioritize local sourcing of materials and components to reduce transportation emissions and support local economies.
- Supplier Audits: Regular audits of our suppliers help us maintain high standards of sustainability and ethical practices throughout our supply chain.

Innovation in Sustainability

- Research and Development: We invest in research and development of innovative technologies and practices that promote sustainability in the automotive industry.
- Sustainable Prototypes: Our projects include developing prototypes that showcase sustainable automotive technologies, such as electric propulsion systems and lightweight materials.
- Industry Partnerships: We seek partnerships with industry leaders to collaborate on sustainable innovations and share best practices.

In summary, our commitment to sustainability is demonstrated through our alignment with national initiatives, effective resource management, and sustainable procurement practices. By adhering to the principles of the FAME India Scheme and NEMMP 2020, we actively contribute to the promotion of electric mobility and the reduction of environmental impact. Our sustainable practices and resource management strategies ensure that we operate efficiently and responsibly, fostering a culture of innovation and environmental stewardship within the VJTI Racing Club.

Benefits To Companies

Supporting the VJTI Racing Club offers numerous benefits to corporations, providing value beyond traditional sponsorships. Here are key advantages for our corporate partners:

1. **Enhanced Brand Visibility:**

- National and International Exposure: By sponsoring our club, corporations gain visibility at prestigious national and international competitions, showcasing their commitment to innovation and sustainability.
- Media Coverage: Our participation in events attracts media attention, offering additional promotional opportunities for our sponsors.

2. **Corporate Social Responsibility (CSR) Alignment:**

- Sustainable Development: Investing in our club aligns with CSR objectives by promoting sustainable development and supporting education in engineering and technology.
- Community Engagement: Corporations can demonstrate their dedication to community engagement and support for the next generation of engineers and innovators.

3. **Positive Brand Association:**

- Environmental Responsibility: Supporting a club that focuses on electric vehicles and sustainable practices enhances the sponsor's image as an environmentally responsible organization.
- Educational Impact: Sponsorship highlights the corporation’s commitment to education and the development of future industry leaders.

4. **Innovation and Research Collaboration:**

- Access to Talent: Sponsors gain access to a pool of talented and motivated students, potentially leading to recruitment opportunities and fresh perspectives on industry challenges.
- Collaborative Projects: Corporations can collaborate with us on innovative projects, leveraging our expertise and creativity to drive forward sustainable technologies.

By partnering with the VJTI Racing Club, corporations not only support the growth and development of our team but also gain significant value through enhanced visibility, CSR alignment, innovation collaboration, positive brand association and valuable networking opportunities. Together, we can drive forward the future of sustainable mobility and engineering excellence.