



## Project Report eBAJA 2022



### Overview:

e-BAJA is an intercollegiate competition in which various colleges from all over India including IITs and NITs compete. The main task involved is to design and manufacture an electric all-terrain vehicle which is capable of performing in harsh conditions. The competition had three phase which included various presentations, report submissions and finally fabrication of the vehicle. Below the schedule and team details are shown.

Phase	Date
Phase-I	04/09/2021
Phase-II	09/12/2021-11/12/2021
Phase-II	01/06/2022-05/06/2022

### Team details:

Faculty advisors
Dr. D. Srinivas Rao -Professor
Dr. Mohd Viqar Mohiuddin-Professor and HOD

Mohammed Abdul Mateen -Team Captain
Mirza Tauqeer Ahmed -Vice-Captain
Mohd. Abdul Rahman- Driver

Rollcage	Steering	Suspension	Braking	Powertrain
Mirza Tauqeer Ahmed (HEAD)	Amaan Uddin (HEAD)	Parth Dhagat (HEAD)	Yousuf Aleem (HEAD)	Abbas Mirza (HEAD)
Sulaiman Ashfaq Amaan Ahmed Shazur Reshma Farhen, Mujib Uddin	Syed Younus Muzamil Adnan Sadath Nazneen, Asim Kamal	Sami Qurashi Abdul Rahman Mujeeb Ullah Ahsan Vaseem Masrath Sultana	Zafeer Ahmed Jubair Shareef Mustafa Aziz Faisal Nuveira Ateka	Mohd Abdul Mateen Tayyab Shoeb Mansoor Arbaan Mujahid



## Project Report eBAJA 2022



**Phase 1** : The first phase of the competition was the Preliminary round in which teams were required to show the overall vehicle designs, specifications, plan of action, team details which was to be displayed in the form of a virtual presentation via Zoom Meetings. The presentation was given by the respective department heads



Preliminary Presentation on 04/09/2021

Phase 1 consisted of a Preliminary presentation along with a Quiz that was taken up online on the same day of presentation.



# Project Report eBAJA 2022



## Phase 1 Results:



**BAJA SAE INDIA  
2022**



### eBAJA SAE INDIA 2022 PRELIMINARY - SCORE

TEAM ID	COLLEGE	TEAM NAME	CTY	STATE	PRESENTATION SCORE (OUT OF 50)	QUIZ SCORE (OUT OF 50)	TOTAL SCORE (OUT OF 100)
22155	INDIAN INSTITUTE OF TECHNOLOGY, HYDERABAD	IITH RACING	SAUNGAREDDY	TELANGANA	33.64	30.50	64.14
22156	INDIAN INSTITUTE OF TECHNOLOGY, INDORE	TEAM ENGINES AND DEMONS	INDORE	MADHYA PRADESH	21.46	36.50	57.96
22157	INDIAN INSTITUTE OF TECHNOLOGY, JAMMU	TEAM KINESIS	JAMMU	JAMMU AND KASHMIR	32.69	26.00	58.69
22158	INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY	TEAM STALIONS	AHMEDABAD	GUJARAT	34.62	32.00	66.62
22159	K.E. SOCIETY'S RAJARAMBAPU INSTITUTE OF TECHNOLOGY RAJARAMNAGAR,	TEAM GALACTUS RACING	ISLAMPUR	MAHARASHTRA	30.03	30.50	60.53
22160	KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY	SKYLINE RACING	BHUBANESWAR	ODISHA	24.84	21.50	46.34
22161	KLE TECHNOLOGICAL UNIVERSITY	TEAM CONCEPT GREEN	HUBLI	KARNATAKA	34.70	27.50	62.20
22162	KS INSTITUTE OF TECHNOLOGY	REDLINE RACING	BANGALORE	KARNATAKA	31.28	8.00	39.28
22163	KUMARAGURU COLLEGE OF TECHNOLOGY	E-BUTZ	COIMBATORE	TAMIL NADU	30.67	27.50	58.17
22164	MALLA REDDY ENGINEERING COLLEGE (A)	DRUNA	HYDERABAD	TELANGANA	19.03	29.00	48.03
22165	MANIPAL INSTITUTE OF TECHNOLOGY	TEAM MANIPAL RACING ELECTRIC	MANIPAL	KARNATAKA	33.71	33.50	67.21
22166	MAR ATHANASIOS COLLEGE OF ENGINEERING, KOTHAMANGALAM	INFLUX	KOTHAMANGALAM	KERALA	35.51	24.50	60.01
22167	MATURI VENKATASUBBARAO ENGINEERING COLLEGE	EGNITORS RACING	HYDERABAD	TELANGANA	27.74	11.00	38.74
22168	MODERN EDUCATION SOCIETY'S COLLEGE OF ENGINEERING, PUNE	TEAM GYRFALCONS	PUNE	MAHARASHTRA	38.34	32.00	70.34
22169	MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY ALLAHABAD	TEAM SHAYAK	PRAYAGRAJ	UTTAR PRADESH	29.85	27.50	57.35
22170	MUFFAKHAM JAH COLLEGE OF ENGINEERING AND TECHNOLOGY	TEAM MUDBROTHERS	HYDERABAD	TELANGANA	35.32	21.50	56.82
22171	N B K R INSTITUTE OF SCIENCE & TECHNOLOGY	TEAM ASHWAMEDHA	VIDYANAGAR, NELLORE	ANDHRA PRADESH	16.92	20.00	36.92
22172	NATIONAL INSTITUTE OF TECHNOLOGY AGARTALA	XANTHRONZ	AGARTALA	TRIPURA	27.74	26.00	53.74



BACKOUT- Teams which registered for the event but did not participate



# Project Report eBAJA 2022



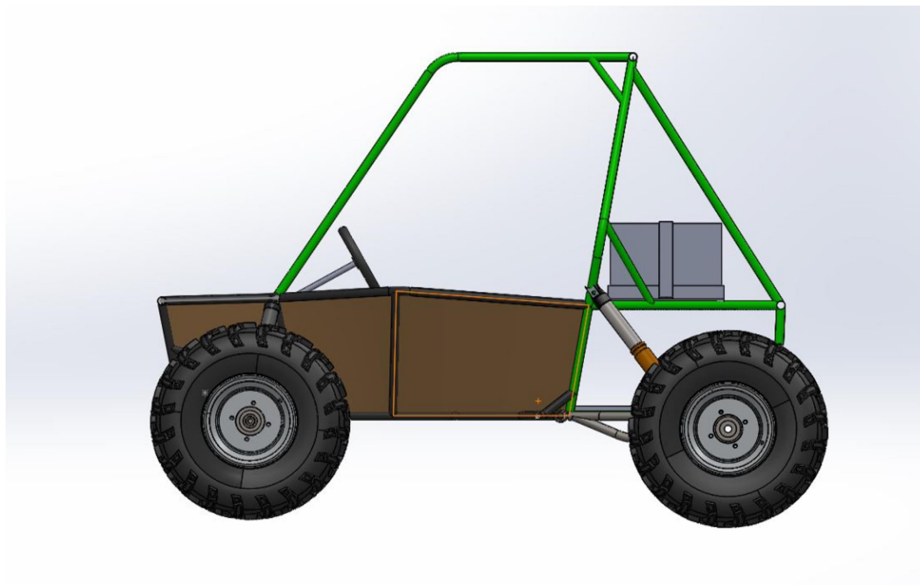
**Phase 2:** The phase 2 of eBAJA 2022 also called the Virtual Round was divided into two parts Virtual Static and Virtual Dynamic.

## 1. Virtual Static Events

1. Cost Presentation
2. Sales Presentation
3. Manufacturing Presentation
4. Design Presentation

These sets of events included submission of several reports and giving presentations which were presented to the Judging panel at eBAJA 2022 via Zoom Meetings.

The Vehicles Sub systems and assemblies were designed using the Solid Works and Lotus Shark Software's later the designed components and assemblies were analysed for determining any type of failures or weaknesses that may arise and the designs were improved accordingly.



This time for the Virtual Static Presentations a team of 20 members were a part with various responsibilities assigned to each one of them.





## Project Report eBAJA 2022



Design Presentation



Cost Presentation



# Project Report eBAJA 2022



Manufacturing Presentation

## 2. Virtual Dynamic Events

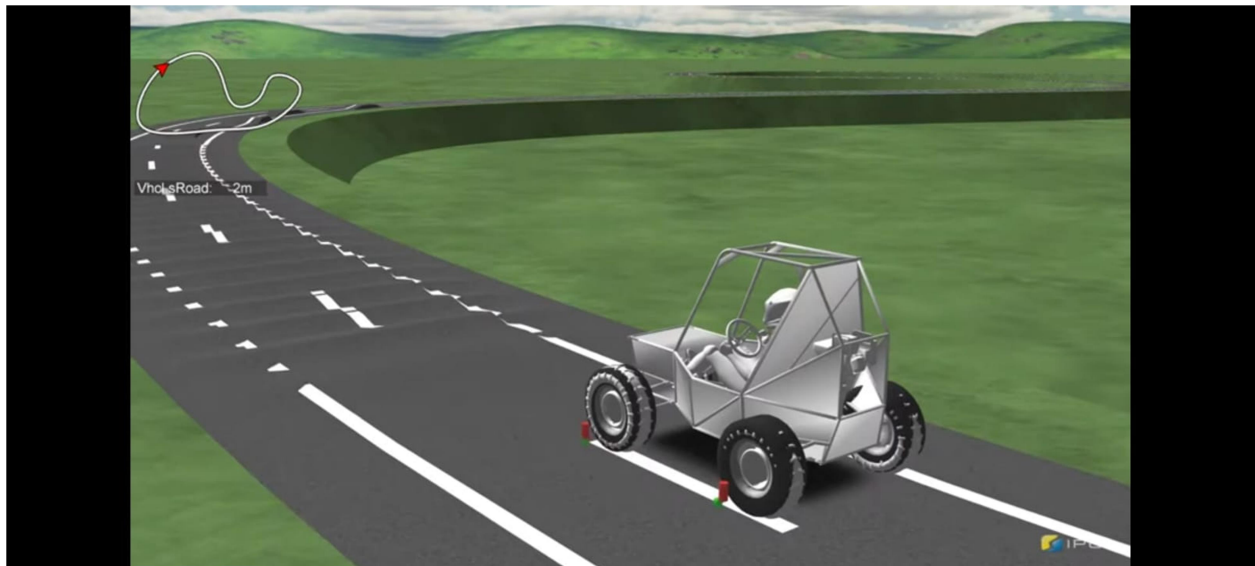
The virtual dynamic event was held on IPG carmaker software which is a Simulation software on which we can run our designed vehicle in order to get the Real time data how our vehicle is performing in real time simulation, this helped us in Improving the designs to increase the performance of our vehicle

Then we uploaded around 200+ values that were required as per our vehicle design, That included Motor capacity, gearbox reduction type, dimensions, and battery Capacity, Tyre dimensions, ground clearance, Steering type, Suspension type, brakes Type, auxiliary systems.

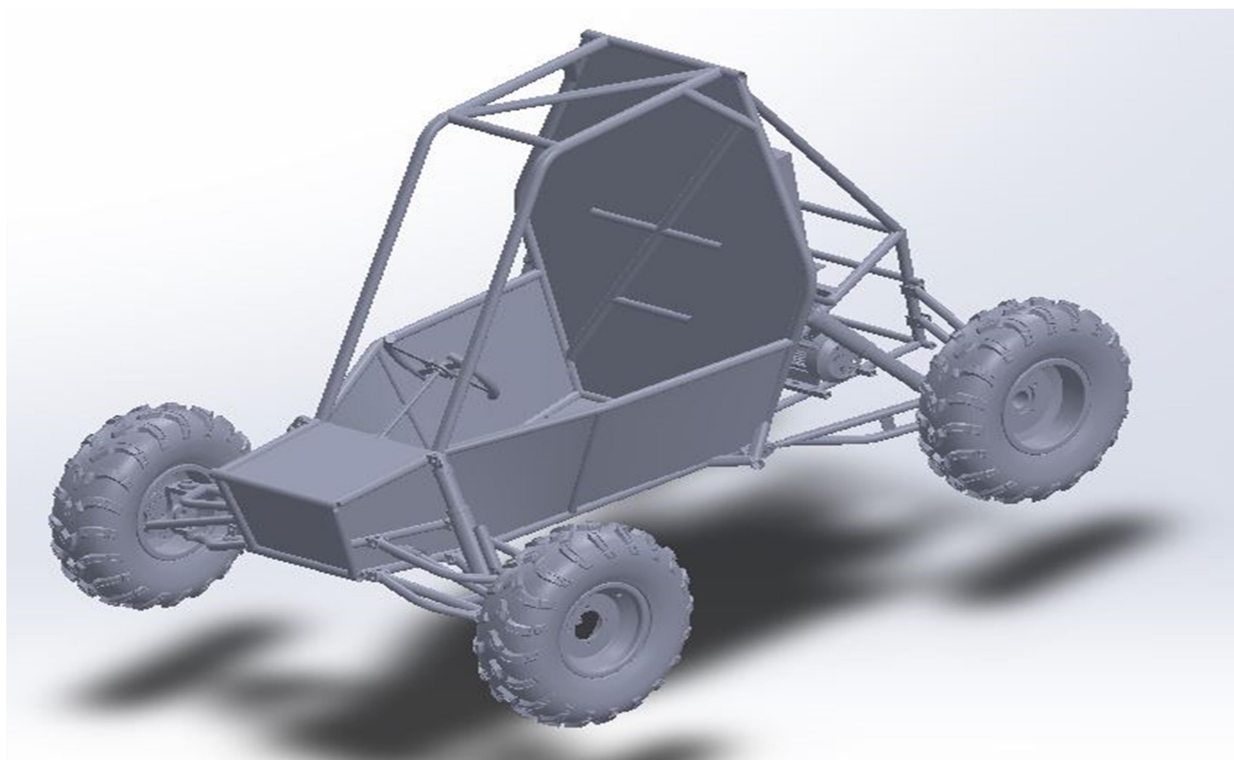
After many setbacks in understanding how the software works we were Successfully able to load our vehicle and manoeuvre it on the test tracks provided by BAJA.



## Project Report eBAJA 2022



IPG Movie Test Run

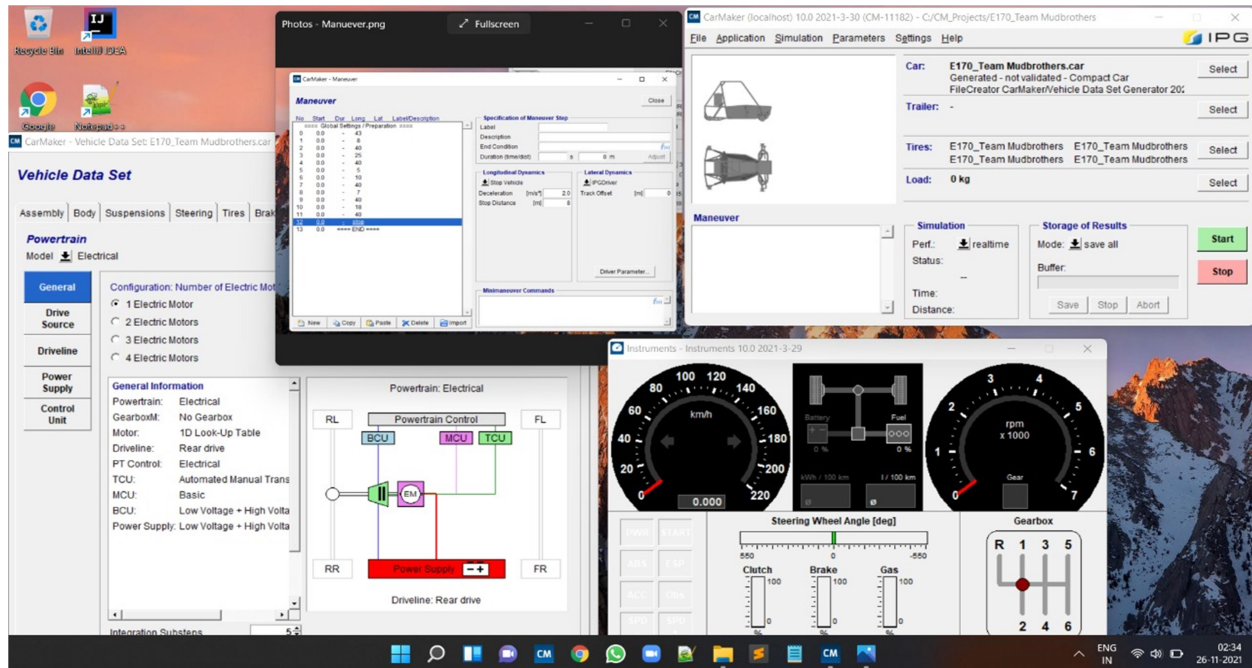


IPG Vehicle Model





# Project Report eBAJA 2022



Vehicle Data Set Generator

## Results For phase 2:

Organized by					BAJA SAEINDIA 2022			Under the aegis of		
SAEINDIA								BENTON		
Society of Automotive Engineers INDIA								CHITKARA		
								GURU NANAK DEV		
								UNIVERSITY		



# Project Report eBAJA 2022



## BAJA SAEINDIA 2022



### eBAJA SAEINDIA 2022 MANUFACTURING PRESENTATION SCORE

TEAM ID	COLLEGE	TEAM NAME	CITY	STATE	MANUFACTURING PRESENTATION SCORE (OUT OF 50)	PENALTY	FINAL MANUFACTURING PRESENTATION SCORE (OUT OF 50)
22170	MUFFAKHAM JAH COLLEGE OF ENGINEERING AND TECHNOLOGY	TEAM MUDBROTHERS	HYDERABAD	TELANGANA	24.23		24.23
22171	N B K R INSTITUTE OF SCIENCE & TECHNOLOGY	TEAM ASHWAMEDHA	VIDYANAGAR, NELLORE	ANDHRA PRADESH	BACKOUT		BACKOUT
22172	NATIONAL INSTITUTE OF TECHNOLOGY AGARTALA	XANTHRONZ	AGARTALA	TRIPURA	24.36		24.36
22173	NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR	TEAM VORTEX	DURGAPUR	WEST BENGAL	20.66		20.66
22174	NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT	TEAM UNWIRED	KOZHIKODE	KERALA	28.74		28.74
22175	NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR	TEAM IGNITRR	RAIPUR	CHHATTISGARH	33.30		33.30
22176	NMAM INSTITUTE OF TECHNOLOGY	TEAM NITTE RACING	UDUPI	KARNATAKA	BACKOUT		BACKOUT
22177	PANDIT DEENDAYAL ENERGY UNIVERSITY	TEAM SOVEREIGN	GANDHINAGAR	GUJARAT	36.00		36.00
22178	PSG INSTITUTE OF TECHNOLOGY AND APPLIED RESEARCH	VELOCITA RACING	COIMBATORE	TAMIL NADU	32.97		32.97
22179	R. C. PATEL INSTITUTE OF TECHNOLOGY	TEAM INVICTUS	SHIRPUR	MAHARASHTRA	19.79		19.79
22180	R.V.R & J.C. COLLEGE OF ENGINEERING	FALCON RACERS	GUNTUR	ANDHRA PRADESH	28.86		28.86
22181	RAJALAKSHMI ENGINEERING COLLEGE	E-FORZA	CHENNAI	TAMIL NADU	27.55		27.55
22182	S.R.M. INSTITUTE OF SCIENCE AND TECHNOLOGY	THE ELECRUISERS	KATTANKULATHUR	TAMIL NADU	27.31		27.31
22183	SAINTGITS COLLEGE OF ENGINEERING	TEAM E-WOLK RACING 2.0	KOTTAYAM	KERALA	15.30		15.30
22184	SCHOOL OF ENGINEERING , CUSAT	E TARUSA MOTORSPORT	KALAMASSERY	KERALA	14.70		14.70
22185	SHIV NADAR UNIVERSITY	TEAM GENESIS	GREATER NOIDA	UTTAR PRADESH	25.45		25.45
22186	SHRI RAMDEOBABA COLLEGE OF ENGINEERING AND MANAGEMENT	TRIDENT RACING	NAGPUR	MAHARASHTRA	34.58		34.58



Backout- Teams which have not reported for BAJA Event  
Defaulters - Teams which did not submit Manufacturing Report on time have been Penalised as per Forum Post Dated 23rd Nov 2021

eBAJA SAEINDIA 2022MANUFACTURING EVALUATION Page 3 of 5



## BAJA SAEINDIA 2022



### eBAJA SAEINDIA 2022 SALES PRESENTATION SCORE

TEAM ID	COLLEGE	TEAM NAME	CITY	STATE	SALES PRESENTATION SCORE (OUT OF 50)	PENALTY	FINAL SALES PRESENTATION SCORE (OUT OF 50)
22157	INDIAN INSTITUTE OF TECHNOLOGY, JAMMU	TEAM KINESIS	JAMMU	JAMMU AND KASHMIR	23.60		23.60
22158	INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY	TEAM STALLIONS	AHMEDABAD	GUJARAT	37.28		37.28
22159	K.E. SOCIETY'S RAJARAMBAJU INSTITUTE OF TECHNOLOGY RAJARAMNAGAR,	TEAM GALACTUS RACING	ISLAMPUR	MAHARASHTRA	15.23		15.23
22160	KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY	SKYLINE RACING	BHUBANESWAR	ODISHA	31.11		31.11
22161	KLE TECHNOLOGICAL UNIVERSITY	TEAM CONCEPT GREEN	HUBLI	KARNATAKA	37.92		37.92
22162	KS INSTITUTE OF TECHNOLOGY	REDLINE RACING	BANGALORE	KARNATAKA	28.56		28.56
22163	KUMARAGURU COLLEGE OF TECHNOLOGY	E-BLITZ	COIMBATORE	TAMIL NADU	28.48		28.48
22164	MALLA REDDY ENGINEERING COLLEGE (A)	DRUNA	HYDERABAD	TELANGANA	22.42		22.42
22165	MANIPAL INSTITUTE OF TECHNOLOGY	TEAM MANIPAL RACING ELECTRIC	MANIPAL	KARNATAKA	31.20		31.20
22166	MAR ATHANASIOUS COLLEGE OF ENGINEERING, KOTHAMANGALAM	INFLUX	KOTHAMANGALAM	KERALA	25.93		25.93
22167	MATURI VENKATA SUBBA RAO ENGINEERING COLLEGE	EGNITORS RACING	HYDERABAD	TELANGANA	21.53		21.53
22168	MODERN EDUCATION SOCIETY'S COLLEGE OF ENGINEERING, PUNE	TEAM GYRFALCONS	PUNE	MAHARASHTRA	38.76		38.76
22169	MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY ALLAHABAD	TEAM SHAYAK	PRAYAGRAJ	UTTAR PRADESH	30.45		30.45
22170	MUFFAKHAM JAH COLLEGE OF ENGINEERING AND TECHNOLOGY	TEAM MUDBROTHERS	HYDERABAD	TELANGANA	21.42		21.42
22171	N B K R INSTITUTE OF SCIENCE & TECHNOLOGY	TEAM ASHWAMEDHA	VIDYANAGAR, NELLORE	ANDHRA PRADESH	BACKOUT		BACKOUT
22172	NATIONAL INSTITUTE OF TECHNOLOGY AGARTALA	XANTHRONZ	AGARTALA	TRIPURA	30.40		30.40
22173	NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR	TEAM VORTEX	DURGAPUR	WEST BENGAL	24.78		24.78
22174	NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT	TEAM UNWIRED	KOZHIKODE	KERALA	35.99		35.99
22175	NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR	TEAM IGNITRR	RAIPUR	CHHATTISGARH	30.60		30.60
22176	NMAM INSTITUTE OF TECHNOLOGY	TEAM NITTE RACING	UDUPI	KARNATAKA	BACKOUT		BACKOUT



Backout- Teams which have not reported for BAJA Event  
Defaulters - Teams which did not submit Sales Report on time have been Penalised as per Forum Post Dated 23rd Nov 2021

eBAJA SAEINDIA 2022 SALES PRESENTATION Page 2 of 4



# Project Report eBAJA 2022



## BAJA SAEINDIA 2022



### eBAJA SAEINDIA 2022 DESIGN PRESENTATION SCORE

TEAM ID	COLLEGE	TEAM NAME	CITY	STATE	DESIGN PRESENTATION SCORE (OUT OF 100)	PENALTY	FINAL DESIGN PRESENTATION SCORE (OUT OF 100)
22157	INDIAN INSTITUTE OF TECHNOLOGY, JAMMU	TEAM KINESIS	JAMMU	JAMMU AND KASHMIR	62.16		62.16
22158	INSTITUTE OF TECHNOLOGY, NIRMA UNIVERSITY	TEAM STALLIONS	AHMEDABAD	GUJARAT	53.47		53.47
22159	K.E. SOCIETY'S RAJARAMBAPU INSTITUTE OF TECHNOLOGY RAJARAMNAGAR,	TEAM GALACTUS RACING	ISLAMPUR	MAHARASHTRA	35.87		35.87
22160	KALINGA INSTITUTE OF INDUSTRIAL TECHNOLOGY	SKYLINE RACING	BHUBANESWAR	ODISHA	33.97		33.97
22161	KLE TECHNOLOGICAL UNIVERSITY	TEAM CONCEPT GREEN	HUBLI	KARNATAKA	63.42		63.42
22162	KS INSTITUTE OF TECHNOLOGY	REDLINE RACING	BANGALORE	KARNATAKA	41.10		41.10
22163	KUMARAGURU COLLEGE OF TECHNOLOGY	E-BLITZ	COIMBATORE	TAMIL NADU	56.53		56.53
22164	MALLA REDDY ENGINEERING COLLEGE (A)	DRUNA	HYDERABAD	TELANGANA	35.51		35.51
22165	MANIPAL INSTITUTE OF TECHNOLOGY	TEAM MANIPAL RACING ELECTRIC	MANIPAL	KARNATAKA	58.53		58.53
22166	MAR ATHANASIOUS COLLEGE OF ENGINEERING, KOTHAMANGALAM	INFLUX	KOTHAMANGALAM	KERALA	44.44		44.44
22167	MATURI VENKATA SUBBA RAO ENGINEERING COLLEGE	EGNITORS RACING	HYDERABAD	TELANGANA	53.60		53.60
22168	MODERN EDUCATION SOCIETY'S COLLEGE OF ENGINEERING, PUNE	TEAM GYRFALCONS	PUNE	MAHARASHTRA	60.15		60.15
22169	MOTILAL NEHRU NATIONAL INSTITUTE OF TECHNOLOGY ALLAHABAD	TEAM SHAYAK	PRAYAGRAJ	UTTAR PRADESH	21.86		21.86
22170	MUFFAKHAM JAH COLLEGE OF ENGINEERING AND TECHNOLOGY	TEAM MUDBROTHERS	HYDERABAD	TELANGANA	33.42		33.42
22171	N B K R INSTITUTE OF SCIENCE & TECHNOLOGY	TEAM ASHWAMEDHA	VIDYANAGAR, NELLORE	ANDHRA PRADESH	BACKOUT		3.14
22172	NATIONAL INSTITUTE OF TECHNOLOGY AGARTALA	XANTHRONZ	AGARTALA	TRIPURA	58.90		58.90
22173	NATIONAL INSTITUTE OF TECHNOLOGY DURGAPUR	TEAM VORTEX	DURGAPUR	WEST BENGAL	24.70		24.70
22174	NATIONAL INSTITUTE OF TECHNOLOGY, CALICUT	TEAM UNWIRED	KOZHIKODE	KERALA	49.27		49.27
22175	NATIONAL INSTITUTE OF TECHNOLOGY, RAIPUR	TEAM IGNITRR	RAIPUR	CHHATTISGARH	63.47		63.47
22176	NMAM INSTITUTE OF TECHNOLOGY	TEAM NITTE RACING	UDUPI	KARNATAKA	BACKOUT		BACKOUT



Backout- Teams which have not reported for BAJA Event  
Defaulters - Teams which did not submit Design Report on time have been Penalised as per Forum Post Dated 23rd Nov 2021





## Project Report eBAJA 2022



### Phase 3 Dynamic Event:

We started with manufacturing of the vehicle after receiving the confirmation form the college from 1st of January 2022, Initially we started with the roll cage of the vehicle with the Raw material delivery.



Raw Material Delivery



Under-seat Members



Grinding and Cutting Operations





## Project Report eBAJA 2022



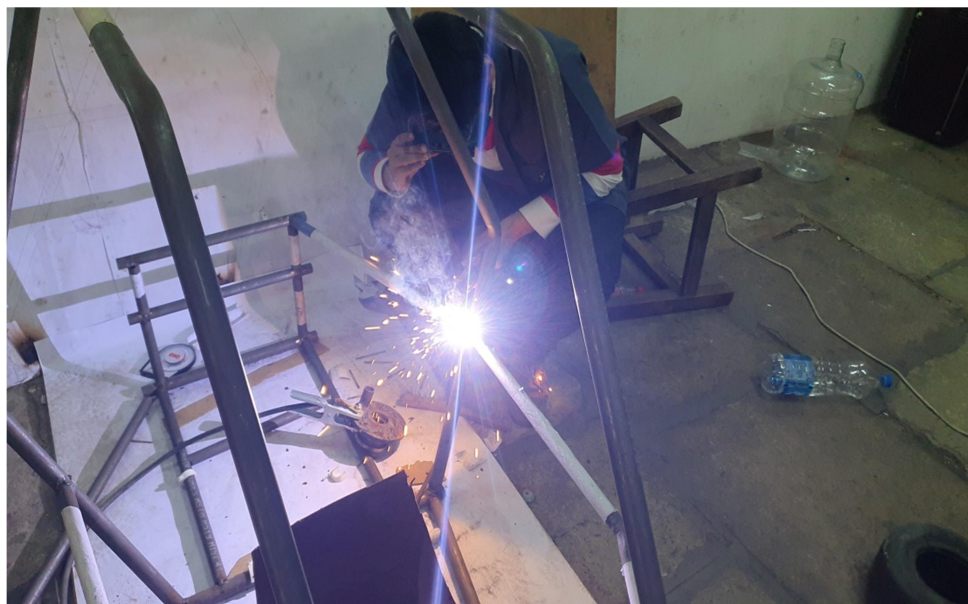
Firstly the basic roll cage members were laid down to form a foundation structure Under Seat (USM), Rear Roll Hoop (RRH) and Front Bracing Members (FBM).



Roll cage with PVC supports



Roll cage with Metal Tubes



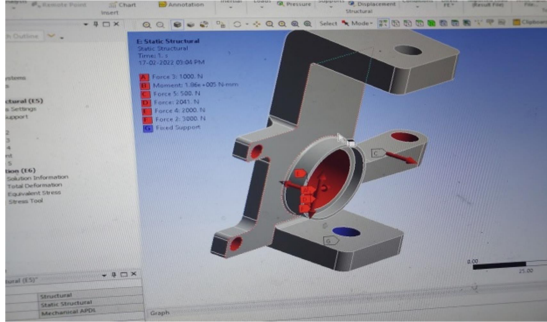
Various operations such as Cutting, Grinding and Welding were performed to form the Structure of the Roll cage.



## Project Report eBAJA 2022



Simultaneously we gave the orders for the Ekit that consisted of the battery, motor, controller and also various auxiliary items requires for the electric drive train.



Knuckle Designing



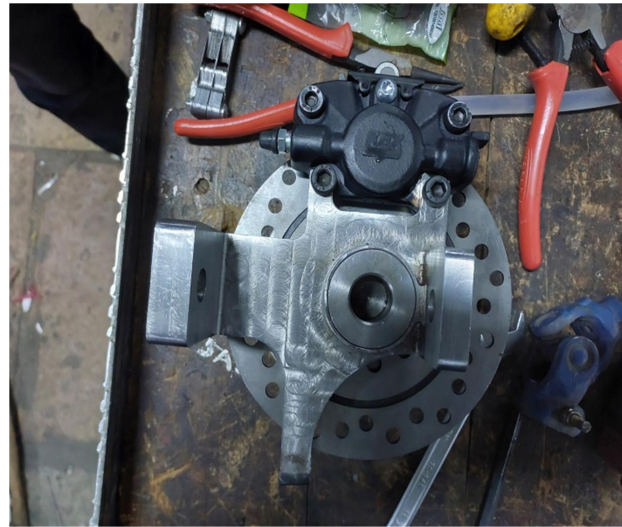
After CNC Machining

With the roll cage fabrication in progress we had designed the knuckle and wheel hubs that will be our wheel assemblies for our vehicle after multiple iterations in the designs we finalised the designed that would best suit our vehicle by eliminating any possible chance of failures.

The front knuckle was designed in such a way that it would accommodate the steering tie rods desired in order to achieve suspension linkages as per lotus software.



After Machining



After Press Fit

The machining of the wheel assemblies were done at Balnagar and the material was procured from fathenagar. We went in person to the workshops at Balnagar and got the machining done.





## Project Report eBAJA 2022



ON 31/01/2022 WE CAME TO KNOW THERE WERE SOME CHANGES IN THE BATTERY DIMENSIONS DUE TO UNAVAILABILITY OF CELLS AND WE WERE REQUIRED TO MAKE CHANGES IN THE ROLL CAGE AND THE BATTERY MOUNTING IN ORDER TO ACCOMMODATE THE BATTERY PACK.

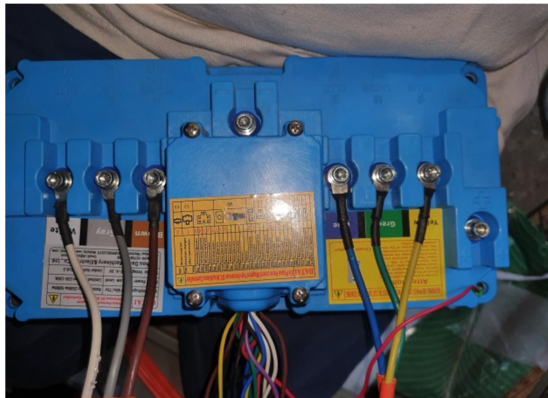


Rack and Pinion Gear Cutting



Steering Housing

After making changes in the rear of the vehicle we started with manufacturing of the steering system and the power train mounting, as we received the delivery of the motor and motor controller.



Testing the Motor Controller

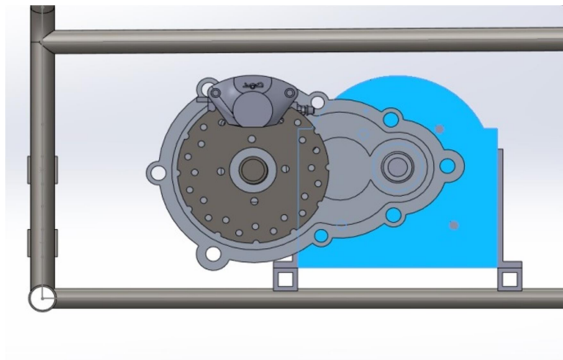


Motor Testing

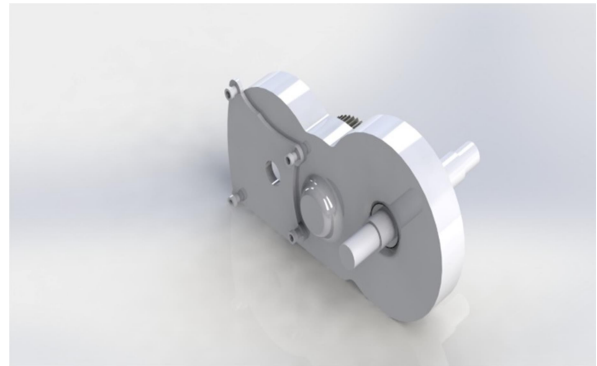
We tested the power train systems once we received it with the help of a dummy battery.



## Project Report eBAJA 2022



Gearbox Positioning in Roll Cage



Gearbox Casing Design

The gearbox design consisted of an integrated mount that would directly mount the motor on the gearbox there by reducing the overall weight and reducing the need of additional mounts.

Later we had our university exams for the 7<sup>th</sup> semester so we gave all the required, machining works at Balnagar and wrote our exams so that by the time we would be finished with our exams we would have all the components ready.

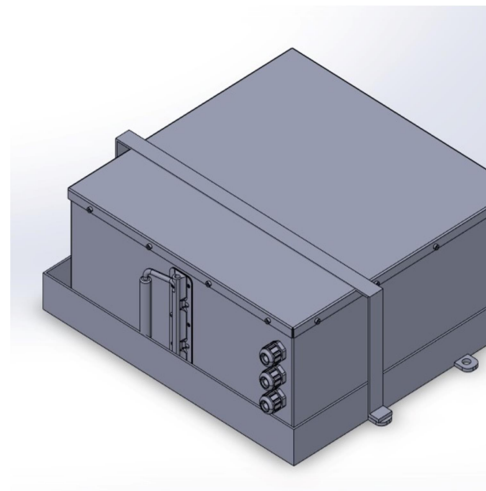
---

WE RECEIVED THE BATTERY ON 17/03/2022 AND IMMEDIATELY STARTED  
WITH THE BATTERY MOUNT WORK FINALISATION AND OVERALL  
INTEGRATION AND PACKING

---



Battery Clearance with Roll Cage



Battery Mount Design



## Project Report eBAJA 2022



Jigs for A-Arms



Trailing Arm



Suspension Mounts

Later for the suspension points and to obtain perfect points to mount the suspension we made use of 3-D printed jigs that would hold the points for welding the mounts

This was done so as have close to perfect suspension geometry and avoiding any type of discrepancies during the time manufacturing and later in operation of vehicle.

During Ramadan we shifted our work timings in order to finish the project in time.

---

ON 16/04/2022 WE CAME TO KNOW ABOUT THE NEW TIME TABLE AT BAJA SO WROTE THEM A MAIL REQUESTING THEM TO EXTEND THE DATE OF EVENT AS THERE WAS A POSSIBLE CHANCE OF OUR 8<sup>TH</sup> SEMESTER EXAMS TO CLASH WITH THE DATES OF THE EVENT, WE DID NOT RECEIVE ANY RESPONSE FROM THERE SIDE SO WE DECIDED TO MAKE A SUBSTITUTE TEAM THAT WOULD TAKE PLACE INSTEAD OF THE FOURTH YEAR STUDENTS BUT THAT WOULD TAKE A LOT OF RISK AS MOST OF THE FABRICATION AND DESIGN WORK IS DONE BY THE FOURTH YEAR STUDENTS AND THE 3<sup>RD</sup> YEARS HAVE LESS EXPOSURE WITH THE POWER TOOLS AND AT THE EVENT TO MAKE ANY CHANGES WE ARE REQUIRED TO MAKE USE OF THE POWER TOOLS, BUT WE STARTED GIVING THE JUNIORS THE TRAINING THAT WAS REQUIRED.

---





# Project Report eBAJA 2022



encl 14/3/22

**ALMANAC for the Academic year 2021-2022**  
**B.E.( All Branches ) VIII- Semester**  
 ( For all Engineering Colleges Affiliated to Osmania University )

1	Commencement of Instruction	24.03.2022
2	CIE ( Internal Test ) - I	25.04.2022 to 26.04.2022
3	Display of CIE-I Marks on or before	06.05.2022
4	CIE ( Internal Test ) - II	18.05.2022 to 19.05.2022
5	Last Date of Instruction	21.05.2022
6	Display of CIE - II Marks on or before	25.05.2022
7	Preparation Holidays and Practical Examinations	23.05.2022 to 28.05.2022
8	Submission of attendance to O.U Exam Branch	25.05.2022
9	Submission of CIE Marks to O.U Exam Branch	28.05.2022
10	Commencement of Theory Examinations	30.05.2022
11	Project Work Viva - Voce	06.06.2022 and 07.06.2022

The class work will be held with (3+3) contact hours per week for all theory courses as against the prescribed contact hours of 3 per week.

Dean  
 Faculty of Engineering, O.U.

Examination Timetable

Organized by

Society of Automotive Engineers (USA)

## BAJA SAE INDIA 2022

Under the aegis of

Phase 3 - II: eBAJA, NATRAX, Pithampur		
Day	Date	Event
Day -1	1 <sup>st</sup> June, Wednesday	Registration, BAT, Press Conference, Inauguration
Day 0	2 <sup>nd</sup> June, Thursday	Technical Evaluation & Validation Event
Day 1	3 <sup>rd</sup> June, Friday	Technical Evaluation, Dynamic Events, CAE Finals Cost Finals, Validation Event, Innovation Event & Dronacharya Event
Day 2	4 <sup>th</sup> June, Saturday	Technical Evaluation, Dynamic Events Design Finals
Day 3	5 <sup>th</sup> June, Sunday	Endurance Race & Valedictory
Day 4 & 5	6 <sup>th</sup> June & 7 <sup>th</sup> June Monday & Tuesday	HR Meet

### STRATEGIES REVAMPED

Our Sponsors:

Supported by

[bajasaeindiacommunications@saeindia.org](mailto:bajasaeindiacommunications@saeindia.org)
[BAJA SAE INDIA](#)
[@bajasaeindia](#)
[BAJA SAE INDIA](#)

New Event Schedule



## Project Report eBAJA 2022



### Regarding Phase 3 participation

1 message

**BAJA SAEINDIA** <bajasaeindiacommunications@saeindia.org>  
To: Team MudBrothers <teammudbrothers@gmail.com>

Thu, 12 May 2022 at 9:36 pm

Dear Team,  
If in case the final year students are not able to participate in the Phase 3 due to exam schedules, they can nominate a Captain, Vice-Captain, Driver & Co-Driver from 3rd year to participate in the event. The same details should be submitted to BAJA SAEINDIA, in prior, as a letter of deviation duly signed by your faculty advisor and HOD.

Regards,  
BAJA SAEINDIA  
[Quoted text hidden]

REPLY from SAE BAJA Committee



The wheel assemblies were done at our college and the alignment process took about 3-4 days to get all the systems properly running in coordination.





## Project Report eBAJA 2022



Our vehicle went for the paint job on 24/04/2022 that was done at Madhapur.

We started with the brakes installation in the vehicle before we could take it into actual testing. The brake bleeding was performed and any air gaps present were removed as that may alter the hydraulic brake actuation.





## Project Report eBAJA 2022



---

AFTER COMPLETING THE BLEEDING WE MOVED ON FOR THE ACTUAL TESTING OF OUR VEHICLE, AND INSTALLATION OF ELECTRICAL SYSTEMS, THE DRIVE SHAFTS WERE ATTACHED AND WE STARTED TESTING OUR VEHICLE FROM 16/05/2022.

---



We came to know about the issues as described by the driver and made the required changes time to time increasing the overall performance of the vehicle.





## Project Report eBAJA 2022



---

ONCE ALL THE GENERAL ISSUES WERE RESOLVED WE STARTED WITH THE RIGOROUS TESTING OF THE VEHICLE FROM 18/05/2022.

---

We started to complete the remaining electrical systems in the vehicle but unfortunately our electrical head Abbas had a small accident while installing the low voltage system of the vehicle there was a short circuit that caused small burns on his hand leading us to stop working on the electrical system.

### Unveiling Ceremony:

A ceremony was organised by the college to Flag off the vehicle and to wish us good luck for the event on 27/05/2022, this was the first electric vehicle that was developed in MJCET and hence the team was applauded for its efforts.



---

OUR VEHICLE DISPATCH WAS SCHEDULED ON 29/05/2022, WE MADE THE REQUIRED CHANGES IN THE VEHICLE AND THE NEXT DAY THE 4<sup>TH</sup> YEAR STUDENTS HAD THEIR FIRST EXAM, SO THE JUNIORS HAD GONE FOR THE VEHICLE LOADING AT MID NIGHT

---



## Project Report eBAJA 2022



All the paper work was handed over to the juniors and they would start the registration process from day 1 and start with the clearing of the mechanical TI as they could make the required changes and at a later stage on the last day of technical inspection the 4<sup>th</sup> years would join and complete the electrical TI.

We decided a time line for clearing the Technical Inspection which was, junior team will clear the Mechanical TI in the first 2 days of the technical inspection (which was practical) and on the last day the seniors will arrive and clear the Electrical TI.

### EXAM TIME TABLE:

**OSMANIA UNIVERSITY**

**TIME-TABLE**

**B.E. VIII Semester - AICTE (Main) EXAMINATIONS: May/June 2022**

**Time: 10:00 am to 01:00 pm**

Page No. 1/3  
Dt. 21-05-2022

Date	Civil	Electronics & Communication	Mechanical	Production	Automobile	Computer Science	Information Technology	Electrical & Electronics	Electronics & Instrumentation
30.05.2022	Professional Elective – VI	Professional Elective – III	Professional Elective – V	Professional Elective – V	Professional Elective – V	Professional Elective – VI	Professional Elective – VI	Professional Elective – V	Professional Elective – V
01.06.2022	Professional Elective – VII	Professional Elective – IV	Professional Elective – VI	Professional Elective – VI	Professional Elective – VI	---	---	Professional Elective – VI	Professional Elective – VI
03.06.2022	Open Elective-III	Professional Elective – V	Open Elective-III	Open Elective-III	Open Elective-III	Open Elective-III	Open Elective-III	Open Elective-III	Open Elective-III
04.06.2022	Gender Sensitization	---	---	---	---	---	---	---	---

Professional Electives III, IV, V, VI & VII : See Annexure

Note: The Examination Centers should give highest priority to health and safety of all concerned by following the Protocols for preventing COVID-19 pandemic.

*Sinapli*  
**CONTROLLER OF EXAMINATIONS**





## Project Report eBAJA 2022



### DAY 0: Registration

The juniors along with Rahim Junaidi Sir completed the team registration and the vehicle was taken into the pits for some minor work that had to be done for rearranging the items that might have been disturbed in transport of the vehicle.



### DAY 1: Technical Inspection

The junior team took the vehicle for the technical inspection with Arbaan Mujahid as Acting Captain, Yosuf Aleem as Acting Vice Captain, and Parth Dagaht as Driver they attempted the first technical Inspection after getting The vehicle inspected the Roll cage structure was cleared in first attempt and There were some issues regarding the general mounting of the components and some minor welding mounts that could have been completed by the Juniors itself, but we had to take the driver safety equipment on rent as our old Safety equipment was not valid as the standards.



## Project Report eBAJA 2022



### DAY 2: Technical Inspection

On the second day of technical inspection the team attended the Electrical Inspection in which we were required to rewire the circuits and to apply conduits. Along with these they made changes for clearing the mechanical TI on the vehicle but they were not able to complete the mechanical TI by themselves resulting in the completion of the Mechanical and Electrical TI in one day along with the brake test.

### DAY 3: Technical Inspection

On the Third and Last day of Technical Inspection We started from the fourth year students arrived at the pits and the necessary changes were made on the vehicle and taken for the Mechanical TI for the safety scrutiny and remaining inspection, later we came to know about the required changes that were required so in the hot pits we started to complete the remaining work, with the electrical work going on parallel at the pits, but on the event we had time restrictions on the event for the last date of Technical



## Project Report eBAJA 2022



inspection the inspections bays were closed earlier than expected and we were only able to clear the mechanical TI and had no time left to attempt the electrical TI, and hence were not able to attempt the Brake test in order to take part in the final Endurance race .

As per our rigorous testing we would have cleared the Brakes and would have even competed in the Endurance race, But due the unfortunate circumstances of the Exams and the event dates overlapping we were helpless and were left with either to send the junior team for the initial event or to not participate at all in the complete event, The department and the teams administration decided to take part in the event and meet the dead lines just in time and on 03/06/2022 the final year students had there last exam giving the seniors the opportunity to attend the event and could only participate for only one day, if they took a flight from Hyderabad right after finishing the university exam at MVSR college.



Fortunately we caught the flight and reached Indore Stay by 10:30 PM but to our surprise the juniors could not clear the mechanical TI leaving us only one day to clear the electrical and mechanical TI with the brake test.





## Project Report eBAJA 2022



We knew that we had a lot of work to do so on the last day of the Technical Inspection with all the efforts we planned on clearing the Mechanical and Electrical Inspection along with the Brakes test, We got to work and started to make the changes that were required in order to clear the Mechanical Inspection first with the changes parallel being made in the Electrical systems. But due to insufficient time we were only able to clear the Mechanical Inspection, by the time we went for our second attempt for the Electrical TI the inspection bays had closed and we were not allowed to get our vehicle inspected after 6:00 PM, Along with this the Baja Organising committee had instructed not to take part in the brake test as we did not clear the Electrical TI. As we were not able to complete the inspections in time we were not allowed to take part in the main Endurance race.

The Root cause of failure was due to clashing of Semester Examination with the Event Dates and also due to BAJA Organizing Committee by not responding to our requests for an extension of the event schedule. Only if the complete team had been in the event since day 1 we surely would have brought some great results for our College.



## Project Report eBAJA 2022



### Event Expenditure:

Total Expenditure	Funds from College	Sponsorships	Collective Team Funding
6,80,000/-	6,00,000/-	20,000/-	60,000/-

We received Rs 6,00,000/- from college for the overall fabrication of the vehicle to take part in the competition, some additional funds were required for miscellaneous expenses that were taken from sponsors and the team had also contributed as well.

And for Event Registrations an amount of Rs 70,815/- was allocated from the college.





## Project Report eBAJA 2022



*At last we would like to thank our College, Mechanical Department HOD Dr.Mohammed Viqar Mohiuddin Sir ,and Faculty Advisor Dr D.Srinivas Rao Sir for Helping and Guiding us From day 1 to make it possible for us in making the vehicle and representing our college at a national level platform.*







## Project Report eBAJA 2022



*Thank you!*