



AISSMS

COLLEGE OF ENGINEERING

ज्ञानम् सकलजनहिताय
Accredited by NAAC with "A+" Grade



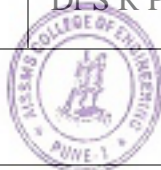
Department of Civil Engineering
IEI STUDENTS CHAPTER

Department of Civil Engineering, AISSMS College of Engineering successfully runs the Institution of Engineers (India) Students' Chapter which is in progress since January 2016. This chapter is for students & by the students which organizes various student activities throughout the year.

Activities in Academic Year 2022-23

Faculty Advisor: -M.S. Chiwande, Assistant Professor

Sr. No	Date	Guest/ Expert Name	Name of the Event	Event conducted by	Organization	No of Students attended
1	17/02/2023	Dr. Vihangraj Kulkarni Nodal Officer to National Clean Air Program (NCAP), IIT Kanpur at NIT Silchar	Application of RS & GIS in the field of Environmental Engineering and Celebration of Innovation week	Mr. P R Modak	AISSMSCOE	46
2	30/01/2023	Mr. Anil Attavar More than 35 years of experience in the private and public sector	Guest Lecture on "Life and times of Civil Engineers"	M S Chiwande	AISSMSCOE	72
3	20/9/2022	Er Rajendra Kumar Saraf Managing Director Viraj Envirozing India Pvt Ltd. Pune	Guest Lecture on Solar Energy and Sustainable Goals	M S Chiwande	AISSMSCOE	124
4	19/9/2022	Dr P B Nangare HOD Civil Engineering Department	Motivational talk	M S Chiwande	AISSMSCOE	98
5	07/09/2022	----	Quiz on 'Structural Analysis'	Dr S R Parekar	AISSMSCOE	54



PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

6	05/09/2022	----	Celebration of Teachers Day	M S Chiwande	AISSMSCOE	120
---	------------	------	-----------------------------	--------------	-----------	-----

Guest and Expert Lecture (03)

IEI students Chapter organised three expert lecture. All the lectures were useful to students to become a good civil engineer. IEI student chapter of civil engineering department organised a expert lecture on “Life and time of civil engineers”, by **Er Anil Attavar**, during his lecture Sir introduced the motivating factors civil engineers have while working in the industry. He also throws light on what effect of civil engineer’s work have on the society and what are the responsibilities of civil engineers toward the society. Sir told students what are the opportunities in industry for internship, he also guided students to work sincerely and try to accept challenges during their internship duration. Second lecture organised by IEI students chapter was on topic “Application of RS & GIS in the field of Environmental Engineering” by **Dr Vihangraj Kulkarni**. Dr. Vihangraj Kulkarni has contributed to various research & consultancy projects and is Nodal Officer to National Clean Air Program (NCAP), IIT Kanpur at NIT Silchar. He is working on a consultancy project on preparation of District Environment Plan for Dhemaji District of Assam and Random inspection of hazardous waste inventory”” for Central Pollution Control Board, New Delhi. Third lecture organised was on topic “Renewable energy sources and sustainable goals” by **Er Rajendra kumar Saraf**, during his lecture sir explained and showed different types of solar cell and explained how they work. He also discussed what are the different goal of sustainability and he showed how renewable sources of energy will help us to achieve those goals. Sir throw light on the ways we can employ to achieve the sustainable goals. Sir explained and talk more on sustainable goal number 2-Zero hunger,3- Good Health and well-being,4 -Quality Education,5-Gender Equality,6-Clean Water and Sanitation, and 7- Affordable and clean energy.



Er saraf sir interacting with students.



Er Attavar sir and other dignitaries on the stage.

Other Activities (03)

IEI students chapter organised other activities for wholesome grooming of the students. Other activities include Motivational talk by HOD Dr. P B Nangare, Quiz on Structural Analysis and celebration of teacher’s day. All of the teaching staff and students from TE and SE were present at this event. The objective of this event was to provide students with motivation and advice from Dr. P. B. Nangare, Head of the Civil Department. This presentation was lively encouraging, and educational. The structural analysis



ALL INDIA SHRI SHIVALI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Quiz was conducted by Dr S R Parekar and M S Chiwande, during the quiz students participated with enthusiasm and enjoyed the activity. This activity was beneficial to improve the technical knowledge of structural analysis subject. The other activities conducted was teachers' day celebration, during this event students shared their gratitude towards their teachers, the announcement of the GS and Joint GS name was also done this program. Some of the faculty and students worked hard for the competition organised on account of "Azadi ka Amrut Mohotsav". Felicitation of the winners and faculty guides was also done during this event. The event was all around very intriguing.



Students interacting during SA Quiz



Felicitation of Azadi Ka Amrit Mohotsav Winners



Declaration of GS and JGS

Faculty Coordinator
IEI Student Chapter

HEAD OF DEPARTMENT
CIVIL ENGINEERING
AISSMS's COE, PUNE-1.



PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



AISSMS

COLLEGE OF ENGINEERING

Approved by AICTE, New Delhi, Recognized by
Govt. of Maharashtra, Affiliated to Savitribai Phule Pune University
and recognized 2(f) and 12(B) by UGC (Id.No. PU / PN/ Engg. / 093 (1992)
Accredited by NAAC with 'A+' Grade



SEASON REPORT 2022-23

AISSMS COE, Pune.

Resonance Racing
eBAJA




PRINCIPAL
ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

About Us-

TEAM RESONANCE RACING IS A GROUP OF STUDENTS FROM VARIED STREAMS OF AISSMS COE. THE TEAM HAS LEARNED THE REAL ESSENCE OF TEAMWORK, RELIABILITY, HARD WORK, TIME MANAGEMENT, ENGINEERING, MANUFACTURING, FINANCE, AND MARKETING. WE BUILD A NEW OFF-ROAD VEHICLE EACH YEAR THAT CAN SURVIVE AND OVERCOME A MULTITUDE OF DIFFERENT TERRAINS AND OBSTACLES. THE TEAM LOOKS FORWARD TO PROFESSIONAL COLLABORATION WITH VARIOUS R&D AND EDUCATIONAL SITES TO HELP BUILD A STRONGER PLATFORM FOR THE YOUNG MINDS IN THE TEAM THAT ASPIRES TO DO THE SAME.

Goals-

To design an off-road electric ATV in pursuit of the perfect balance of speed, strength, and endurance.

Our Vision-

Achieving success in this project would further help us to improve our knowledge and fabricate our racing cars. It would also uplift our college students who dream about the same vision. Closing the gap between industries and college students. It would motivate several aspiring students for innovations in the automobile industry. To improvise both the technical and marketing skills of students.

Table of Content




PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Sr No.	Content	Page Number
1.	Team Structure	3
2.	Phase-1	6
3.	Recruitment	6
4.	Phase-2	8
5.	Design Phase	11
6.	Manufacturing and Procurement	12
7.	Full Assembly of Vehicle	13
8.	Buyouts	13
9.	Testing Phase	14
10.	Unveiling Event	15
11.	Phase 3	16
12.	Results	20




PRINCIPAL
 ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 001

Team Structure-

Team List-

Arjun Taur (C)	BE Electrical	19EL055
Aniket Kinker	BE Electrical	19EL022
Sakshi Lokhande	BE Electrical	19EL026
Mangesh Pakhare	BE Electrical	19EL040
Kunal More	BE Electrical	19EL012
Karan Khalate	BE Mech Sand	19MS026
Pritesh Kawade	BE Mech Sand	19MS026
Atharav Karande	BE Mech Sand	19MS023
Shravan Talwalkar	BE Mech Sand	19MS047
Ujwal Bugude	TE Electrical	20EL013
Kunal Pardeshi	TE Electrical	20EL036
Subodh Patil	TE Mechanical	20ME074
Sushank Sisodiya	TE Mechanical	20ME102
Suhani Pawar	TE Mechanical	20ME079
Hindavi Todkar	TE Mechanical	20ME108
Shivam Shinde	TE Chemical	20CH044
Aman Moon	SE Electrical	21EL032
Vaishnavi Pote	SE Electrical	21EL047
Omkar Dhaybar	SE Mechanical	21ME018
Shivanand Jadhao	SE Mechanical	21ME032
Avishkar Jagtap	SE Mechanical	21ME007
Sanket Rahatkar	SE Mechanical	21ME075
Shrikant Dusunge	SE Mechanical	21ME022
Krrishh Shirbhaiye	SE Chemical	21CH038
Aditya Dhole	SE Chemical	21CH006
Aadesh Khaladkar	SE Chemical	21CH019
Vishal Jadhav	SE Mechanical	21ME034

Faculty Advisors	Role
Prof. A. A. Apte	Faculty Advisor
Prof. V. S. Ponkshe	Faculty Advisor




PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Team Structure-

Management

Captain – Arjun Taur

- Manage Co-ordination and Overall Integration of Team Activities.
- Perform administrative functions – reviewing reports, approving expenditures and ensure goal-oriented Project Execution.

Vice-Captain – Atharva Karande

- Lead Technical Designer driving Technical Team Design & Development.

Team Manager – Aniket Kinkar

- Implement, Supervise and Mediate Team Activities to meet Team Objectives.

Technical Departments

I. Design

Lead – Sakshi Lokhande

Sr. Enginner - Shravan Talawalkar, Pritesh Kawade

Jr. Engineer – Hindavi Todkar

- The main goal was to minimize unnecessary members without compromising the driver safety
- Perform full dynamic analysis on the chassis to obtain deformation for front, side, rear impact and roll over condition.

II. CAE

Lead – Pritesh Kawade

Sr. Enginner - Hindavi Todkar, Suhani Pawar

III. BRAKES

Lead – Kunal More

Jr. Engineer – Shivanand Jadhav

- Designing and CAE Braking System to be implemented.




PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

IV. VEHICLE DYNAMICS

Lead – Karan Khalate

Sr Engineer – Atharav Karande

Jr. Engineer –Subodh Patil, Sushank Sisodiya,

- Design, simulation of suspension and steering.

IV. e-POWERTRAIN

Lead – Aniket Kinkar

Sr Engineer – Aniket Kinkar, Mangesh Pakhare

Jr. Engineer –Ujwal Bugude, Suhani Pawar , Kunal Pardesi, Shivam Shinde

- Design, simulation and CAE of transmission system with the help of solidworks, ansys, hyperworks, kissSOFT,
- Design, simulation of electricals on proteus, tinker cad, MATLAB, motorcad & Arduino




PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Recruitment:

Recruitment was started on 5th April as an aim to recruit new students which will help us with their innovative ideas and also providing them with a unique opportunity to work in industrial, managerial like environment to sustain and develop real engineering skills.

Basic tasks were given and answers were evaluated accordingly. 11 team members were recruited according to their responses, dedication which was evaluated during their interviews. Respective departments were allotted on 2nd May.

These recruits were from various departments such as Electrical, Mechanical, and Chemical! Mentors were allotted respective to their departments and weekly tasks were given and at the end of the week a small meeting were carried out.

Manufacturing Of Chassi:

We started manufacturing the chassis by 1st Sep and Completed it by 13th September.

Also, Mistakes were done in the design of chassis resulting in updating the chassis,

Then late on we remanufactured with the updated design.

It was inspected by eBAJA mentor Yash Kakade Captain of the eBAJA 2022 season. We received positive feedback.

Phase-1:

The design phase was started in the month of January 2022. Various team members were involved in the design of the ePowertrain, vehicle dynamics, roll cage and brakes. The fully assembled design was completed at the end of July 2022.

Preparation for Phase-1 started in the month of Sep. team members were involved in the presentation, speech, report writing, and ppt. The presentation was evaluated by Dr A. A. Godbole (HOD Electrical), and faculty advisors Prof. A. A. Apte and Prof. V. S. Ponshe.

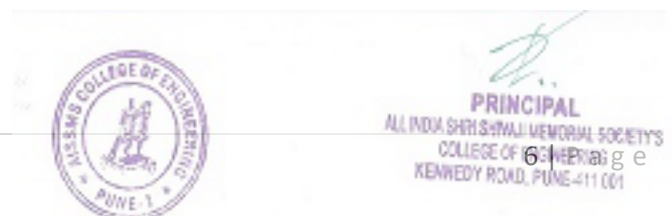
We had Our Preliminary round in the month of September , 5 team members participated in Preliminary Round (Phase-1). Our Presentation was scheduled at 11 am and we completed our speech delivery in 14min 10sec. QnA round lasted for 10-12min approximately.

The question asked:-

Questions Preliminary round Season 2022

Question asked by judges:

1. Clearance between controller and firewall
2. Unit of weight and mass



3. What is understeer and oversteer
4. What is steering ratio and gear ratio on steering
5. What is steering yoke
6. Steering output and why it is important
7. Battery casing material
8. Charging onboard and offboard
9. RPN, how to calculate
10. Steering type allowed
11. CAE on wheel Hub
12. Where is maximum stress on wheel hub
13. Mesh size justification
14. What is minimum FOS required on roll cage
15. Heat transfer coefficient
16. Which type of thermal analysis performed on rotor
17. How to minimize brake fluid temperature

The Quiz Round was scheduled for 7 pm. The quiz was decent and we completed all the 50 questions in 30 min.

In the preliminary round of 2023 season

We managed to secure overall 34th rank

Whereas, we scored;

Presentation: 51.48/ 75

Quiz: 10.75/ 25

We know we lacked at many things and this score does not define the name Resonance Racing...

We started our marketing campaign simultaneously with full potential, as it was the first year of physical participation, we had to purchase all the components newly and as a result, expected expenditures were high.

Being new team we had no prior sponsors in manufacturing as well as in funding. Simultaneously the design was finalized at the end of August..

Phase-2:

Our aim for phase-2 was to improve ranks, utilize newly recruited members and attempt all the events.

In the month of December, we attempted all the events of Phase 2

The Phase 2 was conducted virtually. The event was divided into 2 phases -

1. Statics Round –

In this round various technical as well as non-technical presentations were conducted in virtual manner of Zoom platform.

Technical Events –

- Design Evaluation
- CAE Presentation

Non-technical Events –

- Cost Event
- Sales Event

Sales Event

Sales event went decent. The objective of the Sales Presentation is for the team to convince the “executives” of a hypothetical manufacturing company to purchase the team’s Baja SAEINDIA vehicle design and put it into production at the rate of 4000 units per year. The Sales Presentation Event presents students with the opportunity to gain real-world experience in taking a concept proposal and presenting it for support, be it funding or otherwise. It is focused on providing students with an entrepreneurial outlook to manufacturing their ATVs. An extensive presentation on the non-technical aspects of a business plan combined with technical skills & hypotheses makes for an interesting and experimental event that tests students’ presentation skills, creative thinking, managerial perspective, and aptitude to



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

business essentials such as forecasting, financing, marketing, management, etc. We were able to answer most of the questions asked by the judges and they were satisfied with the answers.

We had a great experience and we are looking forward for the next season.

Cost Event:

Our team took part in a Cost Event which went Good and PPT presentation was also good.

They also asked us different ways to reduce cost.

We were able to answer all of the judges' inquiries with satisfactory answers

The Question asked were –

1. What is the vehicle's total cost?
2. Where you may reduce overall money on your vehicle
3. Where did you do component optimization?
4. What cost reduction techniques was implemented in Knuckle Design.
5. What is the Sub departmental cost?

At the end they made us realised the experience gained and how important is to manage the overall cost. We had Great Experience in participating the event although it was our debut season, we tried our best.

Design Evaluation:

We, the eBAJA team, took part in a Design Evaluation event, which went well and received great and constructive feedback from the judges.

The judges asked following questions.

Powertrain

1. What is gearbox mounting tab?
2. Bending of shaft?
3. Length and diameter of rear driveshaft?
4. Calculated L/K?
5. Will axial forces bend the driveshaft?
6. Why did you choose 3kW motor?
7. Which liquid used for motor cooling?
8. Radiator designed or OEM used?
9. Where will be radiator mounted?
10. Maximum temperature motor attaining?
11. Feedback: DVP DFMEA should be world class considering team's prior experience



Principal
ALL INDIA SHRI SHIVALI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Suspension

1. FOS of Arms?
2. Maximum stress on arms?
3. Yield strength of AISI 4130?
4. How did you calculate FOS?
5. What is load case while calculating FOS?
6. How much is sprung mass?
7. What is total sprung and unsprung mass?
8. Maximum sprung weight of vehicle which is allowed according to rulebook?
9. What type of welding used in linkages and its specs?
10. Considered any weld joint analysis?
11. Manufactured the vehicle?
12. Analysis done for the understeer gradient value?
13. Roll angle considered for vehicle?
14. How much is stopping distance?
15. Feedback: Check FOS, it should be 1.6, recheck analysis.

Vehicle Integration

1. Current stage of manufacturing?
2. How much weight reduction is done by team compared to basic roll cage assembly?
3. How do you compare your chassis with mBAJA team's chassis?
4. Duration of manufacturing and packaging plan?
5. Feedback: No feedback received considering judges were satisfied with all the answers

Roll cage and Ergonomics

1. Welding section analysis
2. Use of square-shaped ELC pipe
3. How did you use manikin? How did you perform RULA?
4. What were errors for meshing?
5. Optimization processes used?

Virtual Dynamics Round –

This round was to replicate the Dynamic Rounds in a virtual manner. In this round the team had to simulate their respective vehicles in IPG CarMaker software.

The teams had to also simulate driver racing style according to different dynamic events like –

- Suspension and Traction
- Maneuverability
- All Terrain Performance
- Acceleration




PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

- Brake Test

The teams were judged based upon their performances in these different events and the judging criteria was the time required to cover the entire track of the respective event.

After successfully completing the phase 2 of BAJA SAEINDIA 2023, we're glad to share result of our Debut season. With every team member's determination, hard work and patience we, the Resonance Racing eBaja Team has secured the following ranks in the specified category.



Manufacturing and Procurement Phase

The month started with the procurement of OEM components and materials for machining. Simultaneously.



PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Basically, this phase mainly focused on outsourcing and assembling the components which was designed .

By December , we have assembled the transmission on the chassis and procured most of the OEM components which are to be mounted.

After the assembly of transmission System , Simultaneously VD manufacturing was started which includes the Track width and Wheelbase fixtures

Later at the end Electrical mountings i.e Battery , HV and LV Connections was done.



Vehicle Asse



Full Assembly



PRINCIPAL
ALL INDIA SHRI SHIVALI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

On 20th February the vehicle was fully assembled it could be possible with every team member's determination, hard work and patience With every team member's determination, hard work and patience.



Considering the Safety Check we had Our First run the day itself, even though the vehicle was not tuned it gave us satisfactory results.

Later on Common team meeting and discussing with our season mentor for proper testing of the vehicle was initiated.

From this Date we had near about a month to properly tune and test the vehicle for the Dynamic Event. With proper timeline and man power we started with testing phase .



Testing Phase




PRINCIPAL
ALL INDIA SHRI SHIVALI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

The Main objective of testing is to understand the vehicles dynamic behavior and to validate it with our Designed Parameters and further tune the vehicle based on event scenarios.

The First few Days testing was carried on the College ground itself so that we could understand the base parameters such as acceleration, Top speed vehicle range etc..



After understanding the base parameters and vehicle performance, the vehicle was shipped to Bhosari for proper and rigorous testing with proper event-based scenarios

With proper testing plan and team dedication we were successfully able to tune our vehicle for each set of events and the performance was promising.



Unveiling Event



On 30th March we had our very first unveiling event where we were proud to unveil our ELECTRIC 4WD “ TITAN X , and will be continuing the legacy of our titan series and entering into a new era of our eBAJA Chapter.




PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

15:00 hrs

Phase 3

Our main objective after successfully completing phases 1 and 2 was to compete in phase 3. We were ready with our vehicle Loading and shipping.

The Chitkara University in Baddi, Himachal Pradesh, hosted the third phase of the eBAJA competition. This four-day tournament, held from April 5 to April 8, includes a variety of unique challenges designed to evaluate teams and the performance of their cars.



On 5th April , registration was done and pit was allotted. The second day saw the commencement of technical inspections.

Basically Technical inspection main objective is to check whether the vehicle is safe to ride and the The ruleset is followed when a vehicle is manufactured which was provided by the SAE BAJA .

On the First Day We attempted both mechanical and electrical TI. Some changes were said to be made by the Judges regarding the safety concerns , later on the next day we cleared both our Technical Inspections ,



Principal
All India Society of Mechanical Engineers
College of Engineering
Kennedy Road, Pune-411 001

After Successfully clearing both the TI , we then took our vehicle for the Brake Test

The first attempt had all wheels locked during panic brake and also at achieving max speed of 43 kmph resulting with Brake Test Cleared at First Attempt !!



On the 3rd Day we attempted our Dynamic events .

The Phase 3 Consists of various Physical Dynamic events with an overall Score of 250.

The Following are the Various Dynamic Events,

1. Acceleration
2. Maneuverability
3. Sled Pull
4. Suspension & Traction

Acceleration

The Acceleration Event is designed to measure each vehicle's ability to come up to speed quickly from a standing start. .

Acceleration is measured as the time to complete a 30.48 m (100 ft.)

The Event Comprises of a total of 50 Points.

Each Dynamic event have 2 Attempts So in the First attempt of Acceleration we managed to complete in 4.75 Secs and in the Second Attempt we covered in 5.72 secs. From this the best of two scored was considered out of which we Scored a total of 28.53 / 50.

Observation

Due to Some Powerloss due to Belt Slippage of CVT was the main reason for lagging behind.



PRINCIPAL
ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Maneuverability

This Event Comprises a total of 50 Points

This event is used to evaluate how well each vehicle can maneuver through typical Baja terrain, the route may include a range of obstacles, such as sharp curves, ruts and bumps, drop-offs, sand, pebbles, gullies, logs, and inclines.

We managed to Secure All India rank 3.

Maneuverability Score – 45.24/ 50



Sled Pull

This Event Comprises a total of 50 points .

The teams were asked to pull a tractor weighing 2100 Kg excluding the driver weight. This event was a quite challenging for us .

Sled Pull Score – 10.14/ 50

Suspension and Traction

This Event carries a total of 100 Points.

Out of which we scored 44.16/ 100 and Secured All India Rank 3



Endurance



PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

8th April was the last day when the most awaited endurance race was held .

The endurance event tests each vehicle's capacity to run continuously and at high speeds over tough terrain with obstacles. The endurance course is a closed loop that ranges in length from 1.0 to 4.0 kilometres. The endurance course may have a variety of surfaces (, dirt, grass, sand, mud, gravel, stone, and asphalt). The endurance course will include a variety of hazards and terrain to put the vehicle's durability, traction, and speed to the test.



Due to Some mechanical Failures we couldn't give our best in the race and managed to secure AIR 11 in the endurance and scored 144.48 / 300.




PRINCIPAL
ALL INDIA SOCIETY'S MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Results:



After successfully completing the phase 3 of BAJA SAEINDIA 2023, we're glad to share result of our Debut season. With every team member's determination, hard work and patience we, the Resonance Racing eBaja Team has secured the following ranks in the specified category.

Overall All India Rank 5

All India Rank 2 Engineering Design Award

All India Rank 2 Best 4WD Vehicle

All India Rank 3 Maneuverability Event

All India Rank 3 Suspension & Traction

All India Rank 4 Virtual Dynamic Maneuverability

All India Rank 4 CAE Event

All India Rank 5 Virtual Dynamic All Terrain Performance

All India Rank 10 Sales Event



ALU



Department of Electrical Engineering
AJSMS College of Engineering, Pune

PRINCIPAL
ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



DEPARTMENT OF MECHANICAL ENGINEERING

Student centric method

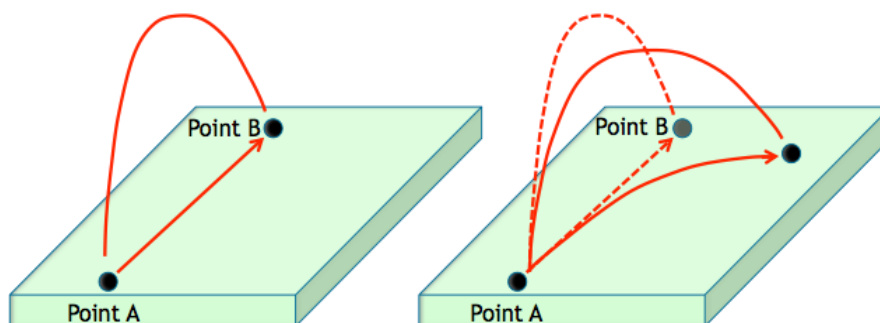
Collaborative Learning

Mechanism for understanding Gyroscopic Effect

Name of the student
ALOK
DAREKAR SANKET AVINASH
DAYE SARTHAK RAVINDRA
DENGAL HARSHVARDHAN AJITKUMAR
DHANGAR GANESH BICHAPPA

Coriolis component of acceleration

In any rotating reference frame, such as the Earth, a merry-go-round or a spinning ice skater, an observer sees a new influence on the motion of objects. A ball thrown between two friends on a merry-go-round will appear to them to take a curved path. They are spinning with the merry-go-round, while the ball moves freely through the air. The component of acceleration that causes this curvature of motion in the rotating reference frame is the Coriolis acceleration. It always points perpendicular to the object's velocity.



frame of reference is stationary

frame of reference is rotating

$$\text{Coriolis component of acceleration} = 2 \cdot v \cdot \omega$$



[Signature]
PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Model prepared by students:



A handwritten signature in blue ink, consisting of stylized letters and a long horizontal line extending to the right.

A handwritten signature in blue ink, consisting of stylized letters and a long horizontal line extending to the right.

**Head of Department
Mechanical Engineering
AISSMS, COE, PUNE,**



PRINCIPAL
ALL INDIA, SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



RESONANCE RACING BAJA

SEASON REPORT 2022-23

UNDER THE GUIDANCE OF
DR. C S DHARANKAR
MR. S A ANSARI

Prepared by
ABHISHEKH
KHATAVKAR
Team Captain
Resonance Racing BAJA 2023




[Signature]
PRINCIPAL
ALL INDIA SHRI SHYAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

CONTENTS

1) Team List.....	03
2) Season Commencement	04
a) Overview	04
b) Season Objectives.....	04
c) Team Structure	05
3) BAJA SAE INDIA PHASE-1	07
4) BAJA SAE INDIA PHASE-2	08
5) Vehicle Testing	09
6) BAJA SAE INDIA PHASE-3	10
7) Season Details	11
a) Season 2021-22 Achievement	11
b) Rankings	11
c) Sponsorship	12
8) Certification Season 2021-22	13
9) Gallery	15




PRINCIPAL
 ALL INDIA SHRI SHYAJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

1) Team List

Member Name	Role In Team	Year	SAE ID	Branch
Abhishek khataavkar	Captain	IV Year	7200520828	Mechanical
Pratul Mulik	Vice-captain & Vehicle Dyn. (L)	IV Year	7200522147	Mechanical
Piyush Suryawanshi	Team manager & Chassis (L)	IV Year	7200522146	Mechanical
Shivam Yewale	Technical (L)& CAE (L)	IV Year	7200522149	Mechanical
Shreyas Parchure	Technical (L) & Powertrain (L)	IV Year	7200522151	Mechanical
Aditya Ghule	Procurement (L)	IV Year	7200522154	Mechanical
Atharva Chirmure	Driver & Marketing (L)	III Year	7210520748	Computer science
Kunal Aher	Co-Driver & Powertrain	III Year	7210523073	Electrical
Manthan Muke	Manufacturing (L) & Powertrain	III Year	7210523021	Mechanical
Sahil Gole	DAQ (L)	III Year	7210520741	Electrical
Ravi Yadav	Brakes (L)	III Year	-	Electrical
Prathmesh Awaghade	Vehicle dynamics	III Year	7210523020	Mechanical
Parth Deshmukh	Vehicle dynamics	IV Year	7210520735	Mechanical
Hrutik Awasthi	Vehicle dynamics	III Year	-	Mechanical
Aditya Kamble	Chassis & CAE	III Year		Mechanical
Suyash Bhandare	Chassis & CAE	III Year		Mechanical
Hritik Kanade	CAE	III Year		Mechanical
Harshal Jagtap	Chassis & Marketing	III Year		Mechanical
Mahesh Shingote	Powertrain	II Year		Mechanical
Avishkar Varpe	Brakes	II Year		Mechanical

Faculty Advisors	Role	SAE ID
Dr. Chandrashekhar Dharankar	Faculty Advisor	7170511666
Mr. S A Ansari	Faculty Advisor	



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

2) Season Commencement

a) Overview

The 2023 season was kick-started with the team selection procedure in APRIL 2022. The team was selected by the senior members of the team after a rigorous round of tests, and a probation period followed by technical interviews.

After evaluating the assets and liabilities of participation in relevant Events, It was decided that the Team would participate in 1 event for the 2022-23 Season which is BAJA SAE INDIA 2023 Pithampur.

As we are venturing into the 4WD domain after the team selection, the season began with brainstorming ideas for the 4WD All-terrain vehicle. Introspecting the previous seasons, the goals and parameters were decided, and the following prospects were decided for the team.

The Team began its Design with set Performance Targets for every department. A thorough Design Literature Review was conducted, and New Design is analyzed from all possible angles. The Team went through Phase 1 which is the preliminary round of BAJA SAE India. Post Phase1, a Design Finalization Phase rendered the entire Vehicle and the Team started with its Manufacturing Phase with simultaneous processing of Components.

Assembling the Entire Vehicle, the Testing phase was enacted at Testing Grounds in Moshi, Bhosari. After a rugged Testing Phase of more than 600km and 160 hrs, the Team and Car were Ready to tackle the competition. The Team Competed in BAJA SAE INDIA in the month of April at Pithampur, Indore

b) Team Objectives

- To incorporate the design of 4WD in the all-terrain WITH IMPROVEMENT in quality and working.
- Upgrade Team's Design and Development Plan along with industry-level Testing and Manufacturing compliance.
- Standardization protocols for Verification and Validation of Vehicle Design.



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

c) Team Structure

Management

Captain – ABHISHEK KHATAVKAR

- Manage the coordination and Overall Integration of Team Activities.
- Perform administrative functions – reviewing reports, approving expenditures, and ensuring goal-oriented Project Execution.

Vice-Captain – PRATUL MULIK

- Lead Technical Designer driving Technical Team Design & Development.
- Provide direction for developing short-term and long-term operational goals.

Team Manager – PIYUSH SURYAVANSHI

- Implement, Supervise and Mediate Team Activities to meet Team Objectives.
- Foster a cohesive, creative, and comfortable working environment within the team.

Technical Departments

I. Roll Cage

Lead – PIYUSH SURYAVANSHI

- The main goal was to minimize unnecessary members without compromising the driver's safety
- To perform RULA Analysis for a better understanding of driver ergonomics and to optimize our design accordingly
- Incorporate a lumbar curve and better thigh support for the driver

II. Computer-Aided Engineering (CAE)

Lead – SHIVAM YEWALE

- Perform the suspension linkage analysis by inertia relief method
- Perform full dynamic analysis on the chassis to obtain deformation for the front, side, rear impact, and rollover condition
- To perform fatigue and kinematic analysis with hyper mesh and IPG CARMAKER industry software.

III. Brakes

Lead – RAVI YADAV

- Inboard Braking System to be implemented.



[Signature]
PRINCIPAL
 ALL INDIA SHRI SHYAJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

IV. Suspension

Lead – PRATHAMESH AWGHADE

- Custom Rear Suspension with improved Regression.
- New Spring Dampers (Afco) to be implemented.

V. Powertrain

Lead – SHREYAS PARCHURE

- Incorporate customized 4WD transmission with the shifting mechanism
- Custom in-House Lightest 2-Stage Transfer case 4WD Gearbox and cageless differential to be designed.
- Simulate Gearbox in System Simulation Software – KissSOFT.

VI. Data acquisition

Lead – SAHIL GOLE

- _Wireless Communication to be set up for seamless communication between the vehicle and ground station.
- Provide the design team with accurate forces for component design

VII. Manufacturing

Lead – MANTHAN MUKE

- Implement Composites - Carbon Fiber Reinforced Components in Seat and Body panels.
- Implement quality inspection with industry-level execution.

Non-Technical Departments**I. Sales and Marketing**

Lead – ATAHRV CHIRMURE

- Implement and manage approaches for sponsorships and marketing
- To represent the virtual industry of manufacturing 4000 vehicle

I. Costing and finance and Procurement

Lead – RAVI YADAV

- Implement an industry model of procurement and finance management simultaneously.
- Maintain a record of costs for each component of a vehicle with supporting documents.



PRINCIPAL
ALL INDIA SHRI SHYAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

3) BAJA SAE INDIA PHASE-1

The Baja competition consists of a virtual round in September and the final round being held in January

The objectives of the Virtual BAJA event are as follows:

- To acquaint the teams completely with the objectives of the BAJA SAEINDIA event.
- The teams are required to familiarize themselves with the technical guidelines and limits for the design of the BAJA vehicle.
- To design the complete CAD Model of the BAJA Vehicle. The design should be complete in all respects to the extent of being considered ready for manufacturing.

Based on the performance in the Virtual BAJA, the teams would be selected for participation in the main event. In the virtual round, the team has to design the proposed buggy completely using CAD software and perform various analyses on it to validate their design as close as possible.

It is also expected that the team comes up with a valid design validation plan backed by a projected timeline. We also have to prepare the costing sheet and bill of material for the buggy

The virtual consists of a presentation round of 15 min and a cross-questioning round of 20 min. The virtual Baja took place on 17th and 18th august 2022. 5 team members represented the team in the BAJA SAEINDIA Virtual Round.

Resonance Racing of A.I.S.S.M.S. College of Engineering has secured Overall **AIR 1st** Place and **AIR 1st** in Virtuals Online Test. The performance in Virtual Qualifiers boosted the Team Spirit through our Results and propelled Us to achieve greater heights of success in the upcoming events.



[Signature]
PRINCIPAL
 ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

4) BAJA SAE INDIA PHASE-2

This phase of BAJA SAE INDIA consists of a Static Design event round and a Virtual dynamic round held in December.

1. Statics Round –

In this round various technical as well as non-technical presentations were conducted in a virtual manner on a Zoom platform.

The various technical events were –

- Design Evaluation
- CAE Presentation

The various non-technical events were –

- Cost Event
- Manufacturing Event
- Sales Event

2. Virtual Dynamics Round –

This round was introduced for the first time in the history of the BAJA Competition to replicate the Dynamic Rounds which are conducted every year in January in Pithampur in a virtual manner. In this round, the team had to simulate their respective vehicles in IPG Car Maker software.

The teams had to also simulate driver racing style according to different dynamic events like –

- Suspension and Traction,
- Maneuverability
- Endurance
- Acceleration
- Brake Test
- Hill climb

The teams were judged based upon their performances in these different events and the judging criteria were the time required, and offsets to cover the entire track of the respective event.

Resonance Racing of A.I.S.S.M.S. College of Engineering has secured **AIR 9th** in go green event, also Team Resonance Racing secured **Overall AIR 1st** in virtual dynamic event we also secured **AIR 2nd** in Maneuverability, **AIR 3rd** all terrain performance.



[Signature]
PRINCIPAL
 ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

5) Vehicle Manufacturing and Testing

After Phase 1, the Team commenced its **Design Finalization and Manufacturing phase**. The Design Finalization phase included **verification of Design** and preparation of Engineering Drawings with GD&T. Foremost, the chassis was constructed using accurate fixtures and sound engineering techniques. AISI 4130 Chromoly steel was selected as the chassis material in compliance with the Rule book.

A **Structured Plan** for Manufacturing along with **Resource Planning** was formulated for parallel Manufacturing processes to **minimize time and efficient workforce management**. Throughout the months of August, September, and October multiple Components were built, machined, and inspected for quality. The team fabricated the mounting tabs by laser cutting method, All the wheel components were manufactured using VMC machining; the team used space-grade aluminum for components making them lightweight and durable. The brake rotors were manufactured using laser cutting and then surface ground to maintain accuracy.

A customized two-stage Transfer case gearbox and cageless differential were manufactured with 20MnCr5 as gear material and drive shafts of EN24. A prototype CVT transmission was designed & tested under several conditions to ascertain the set performance level. We tried a new suspension design in 2021 which 3-Link Suspension System. This suspension system was tried for better load transfer through the damper. The final assembly of the car started in October and the car finally roared on 15th November 2022.

An Extensive testing plan was charted to push the car to its limits in all respects making it ready for the event. A comprehensive Testing Strategy for 65 days was planned in 3 phases
Phase 1 - Includes basic testing procedures of vehicles for validation and data acquisition.

Phase 2 - Covered optimization of vehicle-based driver feedback and analysis of the pre-gathered data.

Phase 3 - consisted of testing and tuning of vehicle for specific events and allowing the driver to gel with the vehicle.

The car was then rigorously tested to its limits for **more than 600 km and 160hrs** on the harshest terrains possible.

After a successful testing session, the buggy was painted and livery representing the Resonance racing legacy was used.



[Signature]
PRINCIPAL
 ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

6) BAJA SAE INDIA PHASE-3

BAJA SAE INDIA is a National Level Intercollegiate Engineering Competition with the objective is to Design, Manufacture, and Race Off-road Vehicles that can withstand rough terrain. SAE BAJA was initiated in 2008. Organized by SAE – Society of Automotive Engineers India

The team participated in the BAJA SAEINDIA competition held at Pithampur, Indore.

Event Date – 14th to 18th February.

Venue – NATRAX Testing Facility, Pithampur, Indore

Event Schedule

1. Technical inspection
2. Static events
3. Dynamic events
4. Endurance race

During the competition, the car cleared the Technical Inspection on the Second Attempt and the Brake Test on the 2nd attempt. The team in the iconic 4-hour endurance race the team completed 16 laps of the circuit. Overall the team stood 6th out of 81 teams participating.

Team Standings (ALL INDIA RANK)

EVENT	RANK
Suspension-Traction	2nd
Maneuverability	1st
Endurance	9th
Overall Dynamic	3rd
Overall season 2023	5th



PRINCIPAL
ALL INDIA SHRI SHYAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

7) Season Details

a) Season 2022-23 Achievements

- ✓ Manufactured first ever durable and customized 4WD all-terrain vehicle.
- ✓ Highest grid position-2nd place on the endurance race grid.
- ✓ Implemented Industry Standards and protocols in Team's Design & Development.
- ✓ Structured 3-Level Testing Process with Total Vehicle Testing of more than 600 km and 160 hrs.
- ✓ Customized Three-link Suspension System along with Afco Racing 18" coil-over Shocks with upgraded spring design
- ✓ Designed a 4WD customized transfer case gearbox and cageless differential Implemented jaw coupling for shifting along with customized UV and propeller shaft assembly
- ✓ Implemented Carbon-Fiber reinforced components successfully.
- ✓ Purchase Order Process for Cost-Efficient Resource Planning.

B) Rankings

Overall season	AIR5	ATP VD	AIR3
Overall dynamic	AIR3	Virtual round	AIR3
Overall virtual dynamic	AIR1	Maneuverability VD	AIR2
Overall statics	AIR9		
Endurance	AIR9		
Suspension and traction	AIR2		
Maneuverability	AIR1		

C) sponsorship

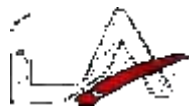
Monetary funds are the basic requirement of every organized event. For teams to achieve targeted outcomes, adequate funds are needed to be allocated in Design, Manufacturing, Branding and promotion, research and development sectors.



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

SPONSORS

Sr.No	SPONSORS	PART SPONSORSHIP	MONETARY SPONSORSHIP Rs.
1	AISSM Society		5,50,000/-
2	Solidworks	Solidworks 2020 Software	
3	Tushar engineering	Laser cutting	20,000/- EST
4	Accufit	VMC sponsorship	10,000/- EST
5	Laxmi automation	VMC sponsorship	18,000/- EST
4	Maruti wafers		11,000/-
6	Sahayadri industries		11,000/-
7	Srujan Enterprises	GTAW Welding	8,000/- EST
8	ASR industries	Powder coating	7000/- EST
9	Scolarian Racing	4130 pipes	7000/- EST
10	Proceed digital	social media marketing	2000/-EST
11	Crowd Funding		30,000/-
12	imperial		60,000



PRINCIPAL
ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004



I 1 CONDUCTING POST SEASON TESTING

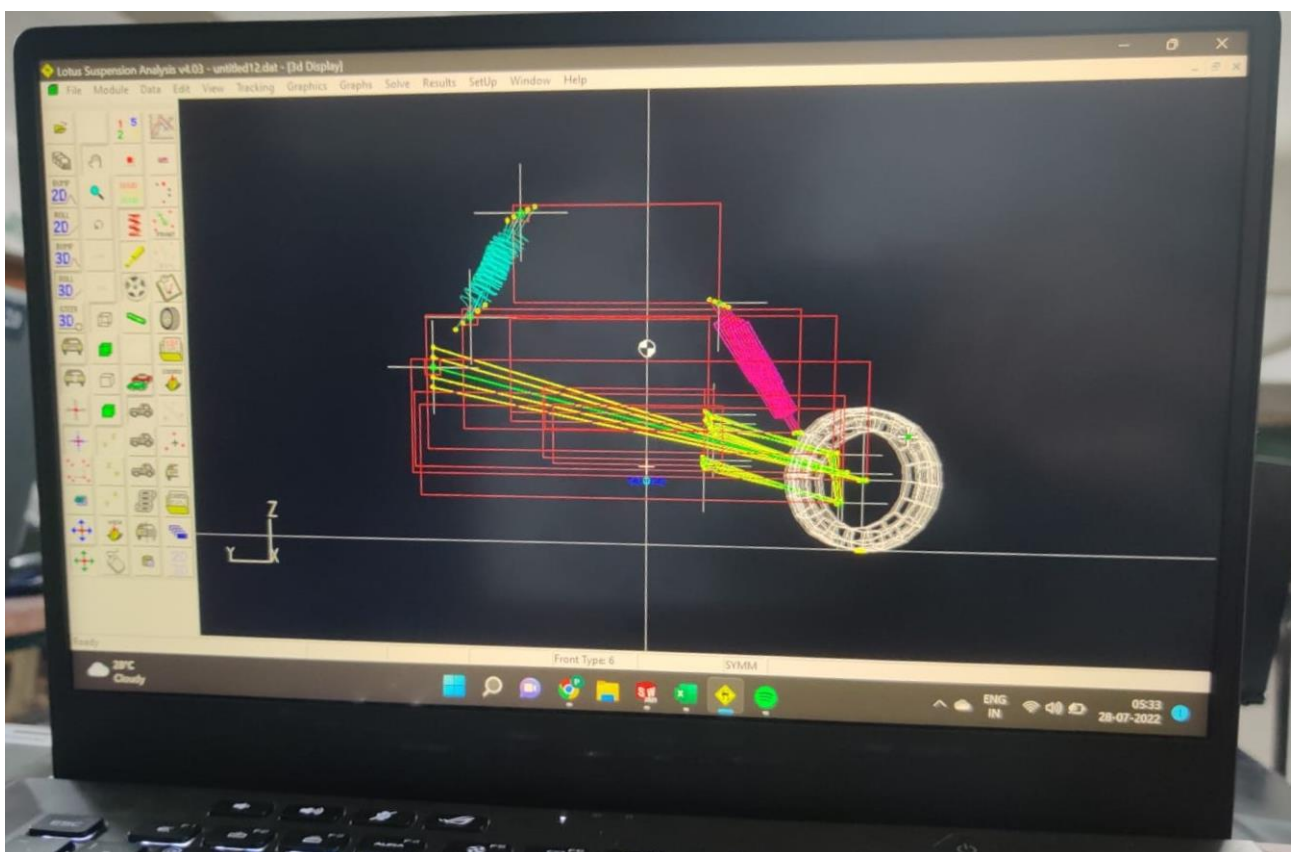


Image 2 VIRTUAL VALIDATION OF NEW DESIGN CONCEPTS



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004

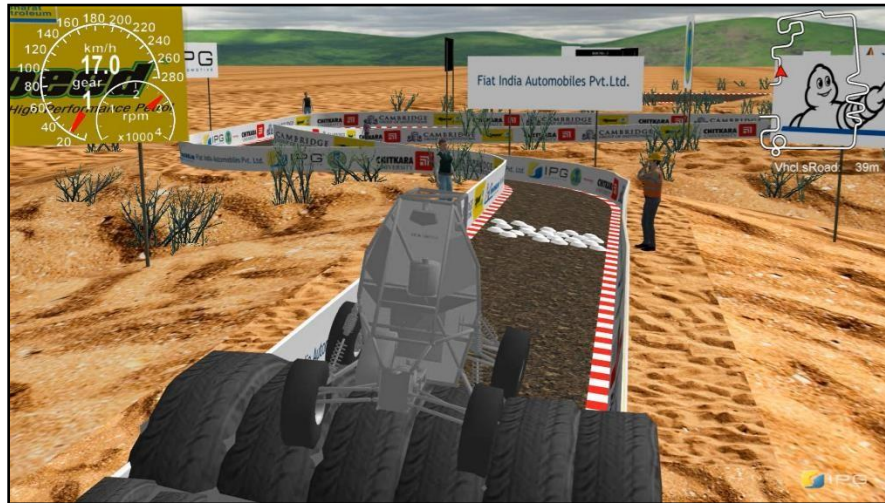


Image 3 ATV PERFORMING ATP IN VIRTUAL DYNAMIC EVENT

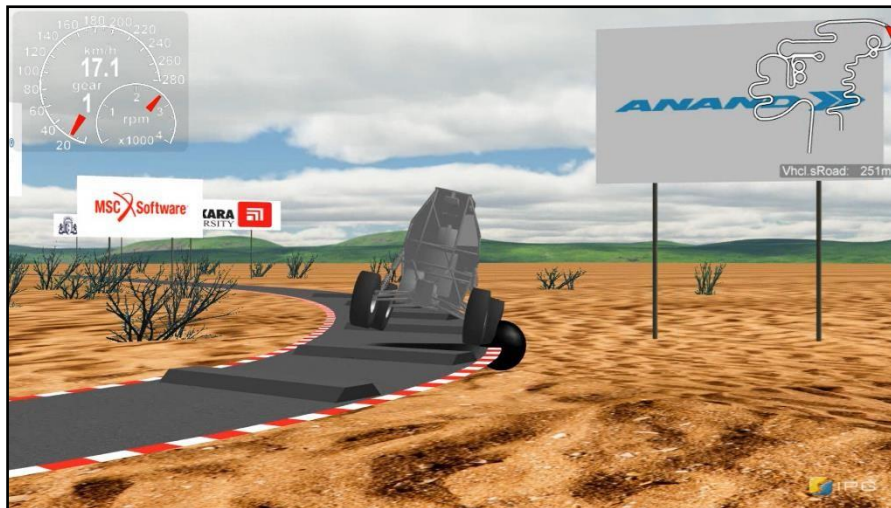


Image 4 ATV PERFORMING MANEUVERABILITY IN VIRTUAL DYNAMIC EVENT

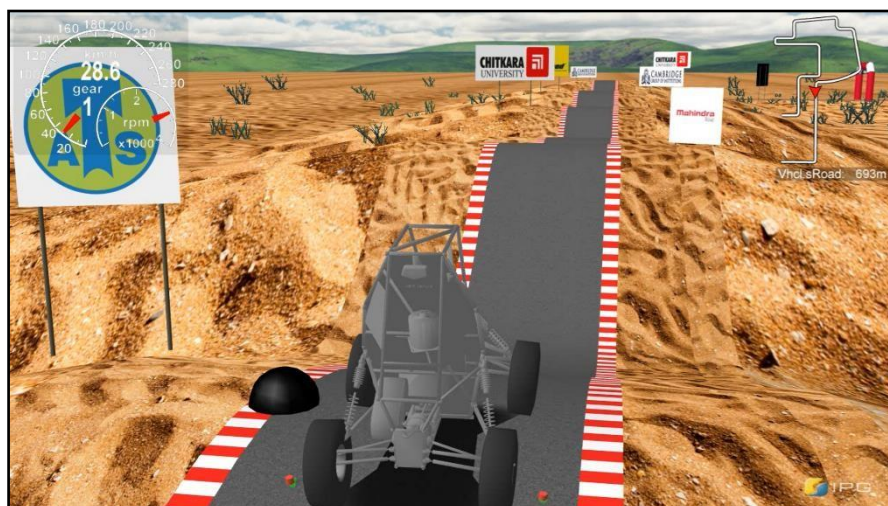


Image 5 ATV PERFORMING S&T IN VIRTUAL DYNAMIC EVENT



Image 6 UPRIGHT VMC MACHINING

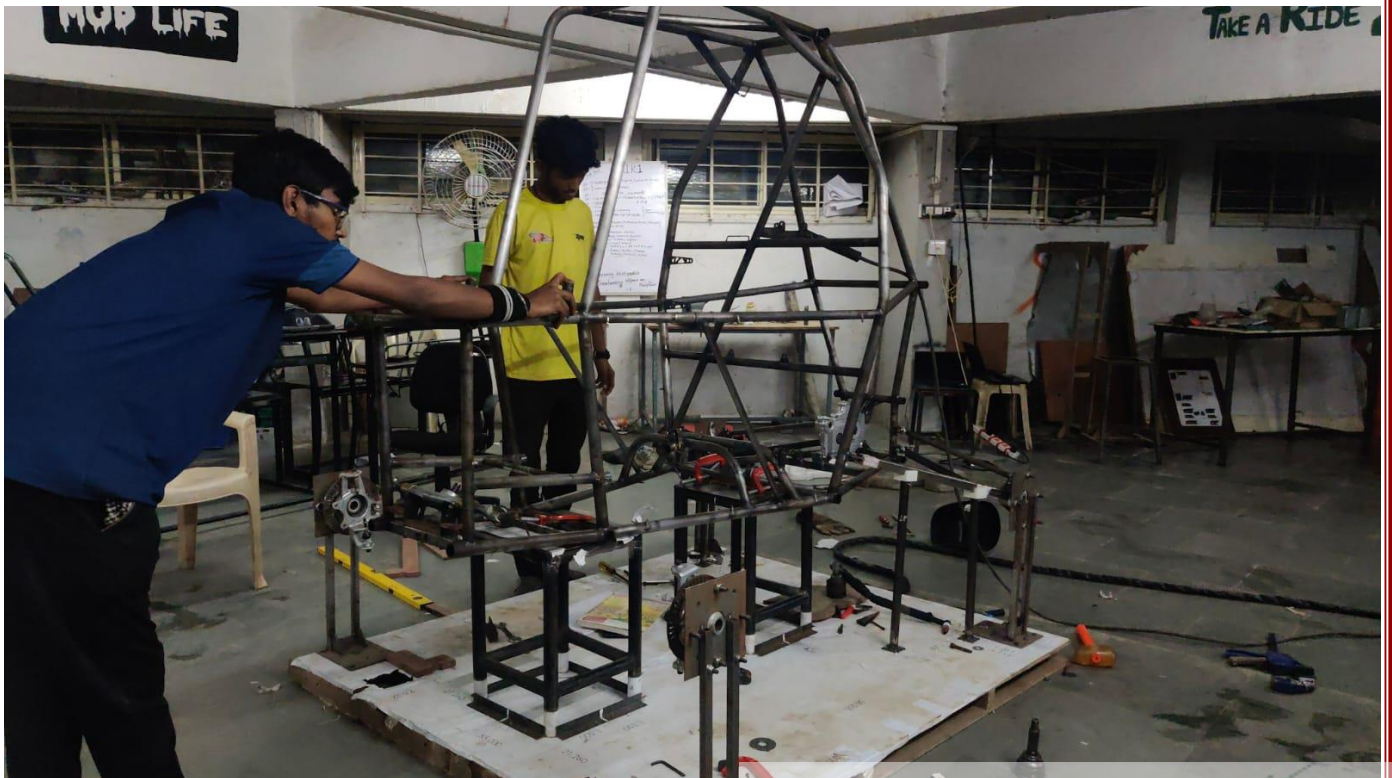


Image 7 FRONT AND REAR SUSPENSION MANUFACTURING



PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004



Image 8 DREADNAUGHT 3.0's FIRST RUN

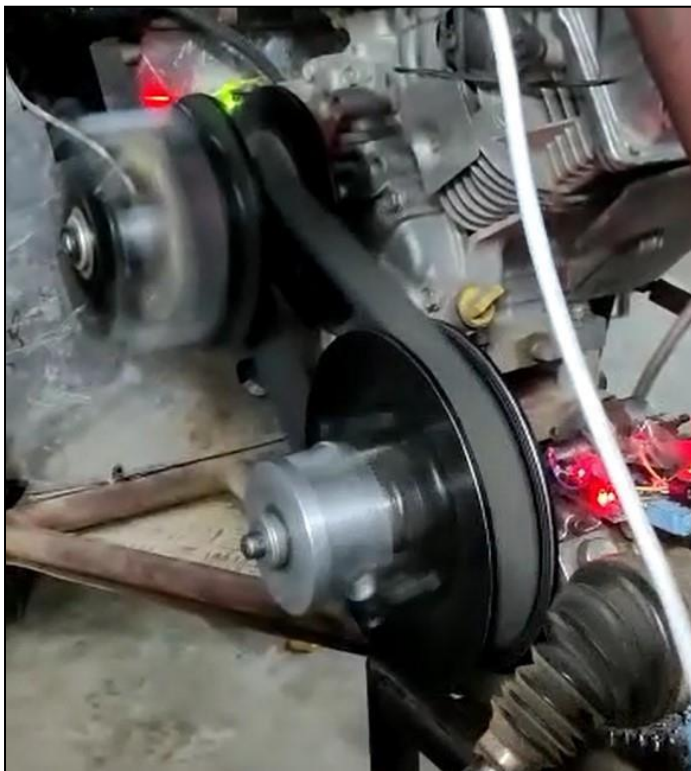


Image 9 CVT DATA COLLECTION WITH RPM SENSOR AND VALIDATION WITH TACHOMETER



Principal
PRINCIPAL
 ALL INDIA SHRI SHYAMJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

Image 10,11 TESTING 1. ENDURANCE 2.S&T




PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 004



Image 12 DREADNOUGHT 3.0 INAUGURATED BY EXECUTIVES OF BAJA SAEINDIA



Image 13 DREADNOUGHT 3.0 AT ACCELARATION TEST



[Signature]
PRINCIPAL
 ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
 COLLEGE OF ENGINEERING
 KENNEDY ROAD, PUNE-411 004

Image 14 DREADNOUGHT CRUISING CONFIDENTLY IN ENDURANCE RACE AT P1 POSITION



Image 15 EVENT SITE



TEAM PHOTO AFTER VALEDICTORY SESSION





TROPHIES WON



PRINCIPAL
ALL INDIA SHRI SHYAM MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



TROPHIES WON



Organized by **SAE INDIA**

Speed High Performance Petrol

PRESENTS BAJA SAE INDIA 2023

Under the aegis of: **REFUEL RECHARGE REINVENT** Breaking Into The New Era...

WINNER

MANEUVERABILITY AWARD

Amount: **Twenty Thousand Rupees Only**

₹ 20,000/-

mBAJA - Pithampur

Date: 18th February 2023

Organized by **SAE INDIA**

Speed High Performance Petrol

PRESENTS BAJA SAE INDIA 2023

Under the aegis of: **REFUEL RECHARGE REINVENT** Breaking Into The New Era...

1st RUNNER UP

VDE MANEUVERABILITY AWARD

Amount: **Fifteen Thousand Rupees Only**

₹ 15,000/-

MathWorks

mBAJA - Pithampur

Date: 18th February 2023

Organized by **SAE INDIA**

Speed High Performance Petrol

PRESENTS BAJA SAE INDIA 2023

Under the aegis of: **REFUEL RECHARGE REINVENT** Breaking Into The New Era...

1st RUNNER UP

SPECIALITY EVENT AWARD

Amount: **Fifteen Thousand Rupees Only**

₹ 15,000/-

mBAJA - Pithampur

Date: 18th February 2023

PHOTOS OF CHEQUES



SV

PRINCIPAL

Head of Department
Mechanical Engineering
A.I.S.S.M.S. COLLEGE OF ENGINEERING, PUNE-1



Department of Mechanical Engineering, 18th Engineering Today-2023

Name of the Event: MECHPULSE
Organized by: AISSMS College of Engineering Pune, Department of Mechanical Engineering.
Date: 14 th & 15 th September 2023
Time: 9:00 am to 3:00 pm
Venue: AISSMS COE, PUNE
Total Participants: 409
Faculty Co-Ordinator: Mrs. A. T. Thombare

Detail report of Event:

Brief Introduction of MECHPULSE:

“MECHPULSE” an event organized by Mechanical department of All India Shri Shivaji Memorial Society’s College of Engineering, Pune. Under MECHPULSE event there were three different enthusiastic and thrilling events conducted which were, ROBO RACE, CAD WAR and ESCAPE ROOM. These sub events consisted of different types of rounds. Many students from different colleges participated in the event.



ROBO RACE :

This event consisted of two rounds the round one was the qualifier round and round two was the final round the participants were required to cross different huddles with increasing difficulties and the participants were evaluated on the bases of time.

Glimpses of Event



PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

CAD WAR :

"Cad War: The event was held in three rounds and even in two different modes.

Round 1:

- A 2D sketch will be given to all the participants.
- Participants have to draw the sketch in given time.
- Time limit: - 20 mins.

Participants who have completed sketch in given time will be selected for round

Round 2:

- In this round two 2D model/sketch will be provided to participants and participants must draw the model in a given time.
- Time limit: - 30 mins.
- Participants who have completed sketch in given time will be selected for round 3.

Round 3:

- In this round participant have to do drafting of a given 3D model.
- Time limit: - 60 mins.



Inauguration of Cad War event by HOD and ET coordinator of Mechanical Department




PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Glimpses of Event




ESCAPE ROOM:

An escape room is a popular and immersive adventure game that challenges participants to solve a series of puzzles and riddles within a set time limit to "escape" from a themed room. Typically designed for small groups of participants, escape rooms offer a unique and interactive form of entertainment. Players must work together to uncover clues, decipher codes, and unlock hidden compartments to progress through the game and ultimately achieve their goal, which is usually to find a way out of the room or complete a specific mission.

Escape rooms come in a variety of themes, ranging from mysteries and historical scenarios to science fiction and horror settings. The success of the game relies on teamwork, critical thinking, problem-solving skills, and creativity as participants race against the clock to unravel the room's secrets and achieve their objectives.

Escape rooms have gained tremendous popularity worldwide as a social and intellectual activity, suitable for friends, family gatherings, team-building exercises, and even special events like birthdays or corporate outings. They provide an engaging and challenging experience that fosters collaboration and excitement, making them a unique form of



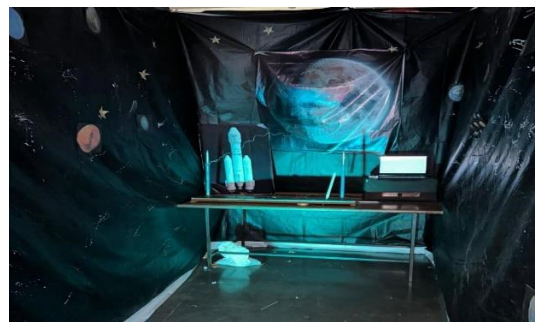

PRINCIPAL
ALL INDIA SHRI SHWAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

entertainment and adventure for participants of all ages.

Glimpses of

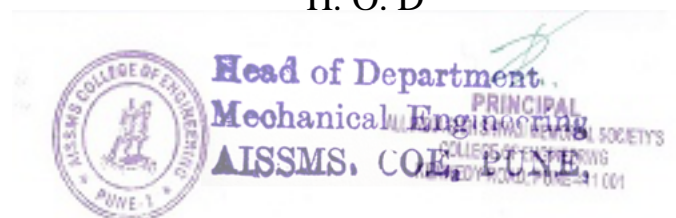


Event



Mrs. A. T. Thombare
Dept. Faculty ET Coordinator

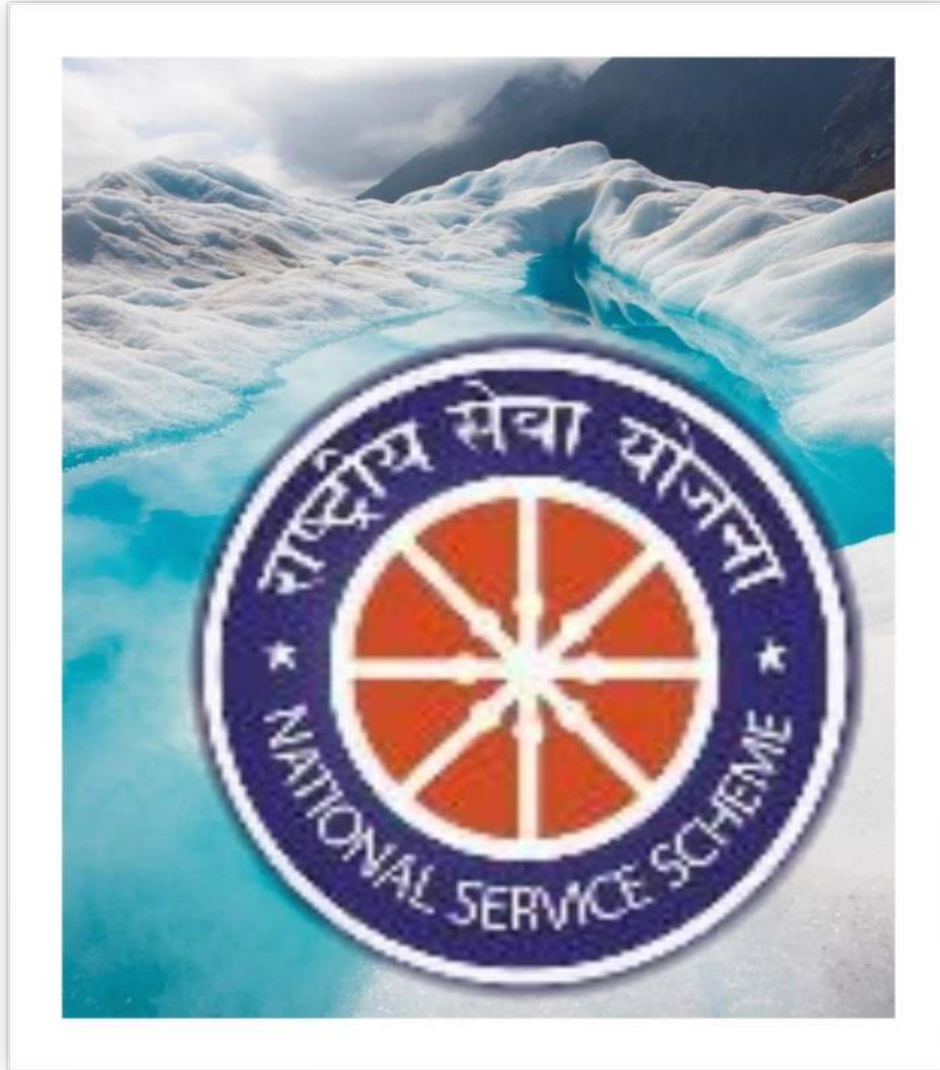
Dr. S. V. Chaitanya
H. O. D





AISSMS
COLLEGE OF ENGINEERING

ज्ञानम् सकलजलद्विताय
(Accredited by NAAC with 'A+' grade)



NATIONAL SERVICE SCHEME

ANNUAL REPORT 2022-2023

Programme Officer
National Service Scheme
AISSMS College of Engineering
Pune - 411001

Program Officer
Dr. N. N. Shejwal



Dr. Nana Shejwal | NSS | March 31, 2023



Principal
Dr. D. S. Bormane

PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
MIDC, PUNE-411001



AISSMS
COLLEGE OF ENGINEERING
ज्ञानम् सकलजनहिताय
(Accredited by NAAC with 'A+' grade)



INDEX

REGULAR ACTIVITY

YEAR:2022-23

Sr.No.	Activity	Date	Guest	No Of Participant	No.Of Hours
1	Budhha Pournima	16/05/2022	Dr. D S Bormane	70	1
2	Swantryacha Amrit Mahostav	28/05/2022	Shri Anurag Thakur	700	2
3	Voters Workshop SPPU	05/06/2022	Ajit Pawar	2000	3
4	Environmental conservation	05/06/2022	Rajesh Dimble	20	5
5	POSCO Awareness	12/06/2022	Rajesh Dimble	16	3
6	Dindi program	15/06/2022	Dr. Prabhakar Desai	600	2
7	International Yoga Day	21/06/2022	Kailas Patel	600	3
8	Kargil Vijay Divas	26/07/2022	Dr. N. N. Shejwal	110	2
9	Save Tiger Prog	29/07/2022	Dr. N N Shejwal	70	1
10	Sawand Karyshala	27/07/2022	Jayant Kishor	700	2
11	EK divas Balirajyasathi	02/08/2022	Rajesh Dimble	10	4
12	Har Ghar tiranga SPPU	09/08/2022	Dr. Karbhari Kale	2000	2
13	Har Ghar Tiranga	14/08/2022	Nitin Ghorpade	140	2
14	Rejuvenate With Yoga	05/09/2022	Mrs.Archana Patil	109	3
15	Blood Donation Camp	07/09/2022	Dr. Murlidhar Tambe	560	8
16	Transgender Participation In Democracy	14/09/2022 15/09/2022	Mr.Shrikant Deshpande	1000	16
17	Yuvasandan	16/09/2022	Mr. Pratap Mankar	130	3
18	World Spine Bone Day (Walk A Thon)	16/10/2022	Dr. S.B. Patil	600	4
19	Sci-Tech Village Thone	19/10/2022	Dr. Sanjaykumar Pingat	200	4
20	Science Exhibition	20/10/2022	Dr. Vivek Sawant	1200	8
21	Aapulkichi Diwali	21/10/2022	Dr. D. S. Bormane	120	2
22	Rastriya Ekta Diwas	31/10/2022	Dr. D.S. Bormane	350	2
23	Multimedia Digital Exhibit VotersRegistration (Election Commission Program)	09/11/2022	Rajiv Kumar CE	650	2
24	Voters Awareness Rally	01/12/2022	Rajesh Dimble	230	2
25	Adult Literacy Program Inauguration	08/12/2022	Rt. Bishwajeet Ghosh	170	2

Program Officer
Dr. N . N. Shejwal



Principal
Dr. D. S. Bormane

PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
MIDC, PUNE-411 001



AISSMS
COLLEGE OF ENGINEERING

ज्ञानम् सकलजलदिताय
(Accredited by NAAC with 'A+' grade)



26	G20 Sumittee	14/01/2023	Dr. Karbhari Kale	300	3
27	Republic Day	26/01/ 2023	Chh. Malojiraje	2500	3
28	Swachh Gram In Kalyan	22/02/2023	Rajesh Dimble	1100	4
29	Food Distribution Program	03/03 /2023	Dr. D. S. Bormane	87	2
30	Women Entrepreneurship Workshop	04/03/2023	Mrs. Arti Dolas	125	2
31	International Women Day	08 /03/2023	Dr. Amit Gogawale	100	2


Program Officer
National Service Scheme
AISSMS College of Engineering
Pune - 411001

Program Officer
Dr. N . N. Shejwal



Principal
Dr. D. S. Bormane


PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
RAJENDRA NAGAR ROAD, PUNE-411 001



AISSMS

COLLEGE OF ENGINEERING

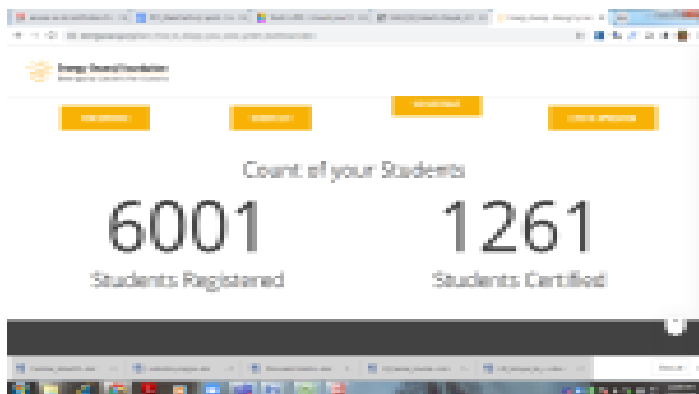
ज्ञानम् सकलजनहिताय

Approved by AICTE, New Delhi, Recognized by Govt. of Maharashtra,
Affiliated to Savitribai Phule Pune University and recognized 2(f) and 12(B) by UGC
(Id.No. PU / PN/ Engg. / 093 (1992)
(Accredited by NAAC with grade A+)



Green Initiatives taken by AISSMS College of Engineering, Pune

- Started Solar Energy Society of India (SESI), Students Chapter
- Started Western Regional Chapter of Solar Energy Society of India (SESI)
- Organised International Conference of Green Energy (ICOG-2023)
More than 150 papers received.
- Installed Climate Clock to aware stake holders about Global warming.
- Conducted Learn to Design Solar for Homes in association with **Energy Swaraj Foundation for Internal and External Stake holders**. Vast Response received from all Over India
- ❖ Registered: **6001**
- ❖ certification Done: **1261**
- ❖



- Conducted Energy Literacy Training (ELT) in association with Energy Swaraj Foundation for Internal and External Stake holders.
- ❖ No. of Registered Participants: 4657
- ❖ No. of Participants completed the Course: 2351
- ❖ No. of Participants in process of course: 1099

Outcomes:

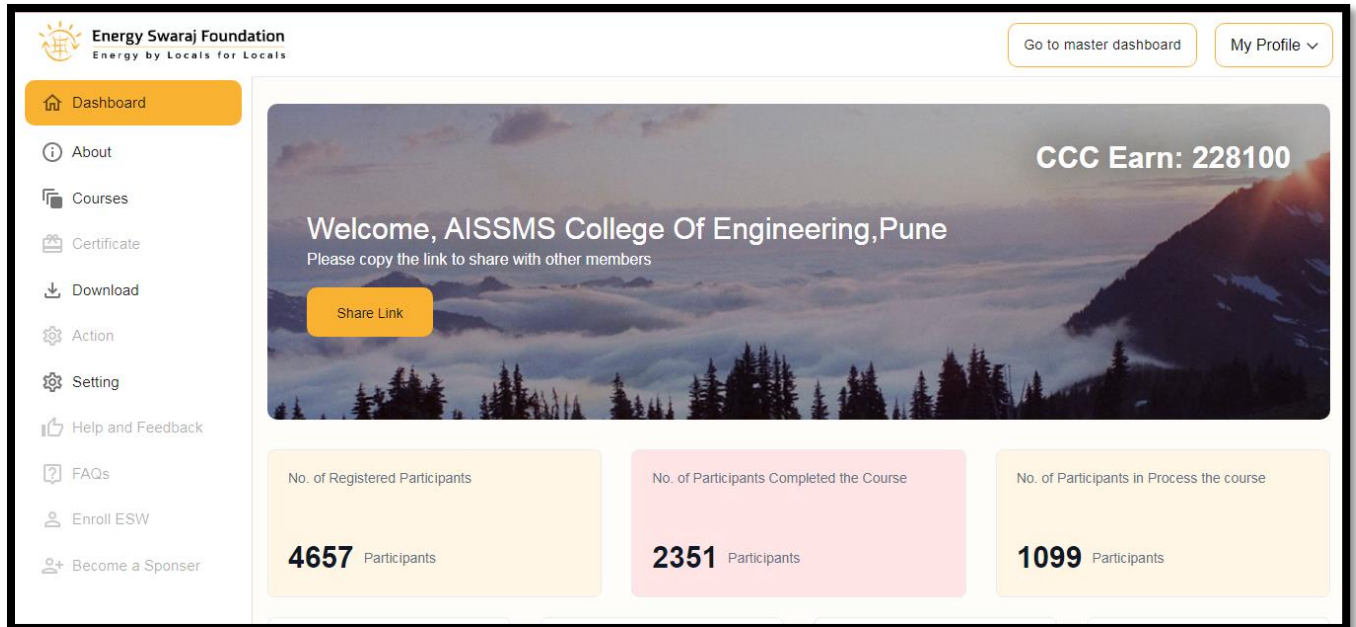
Solar Energy Society of India (SESI) Green Award-2023



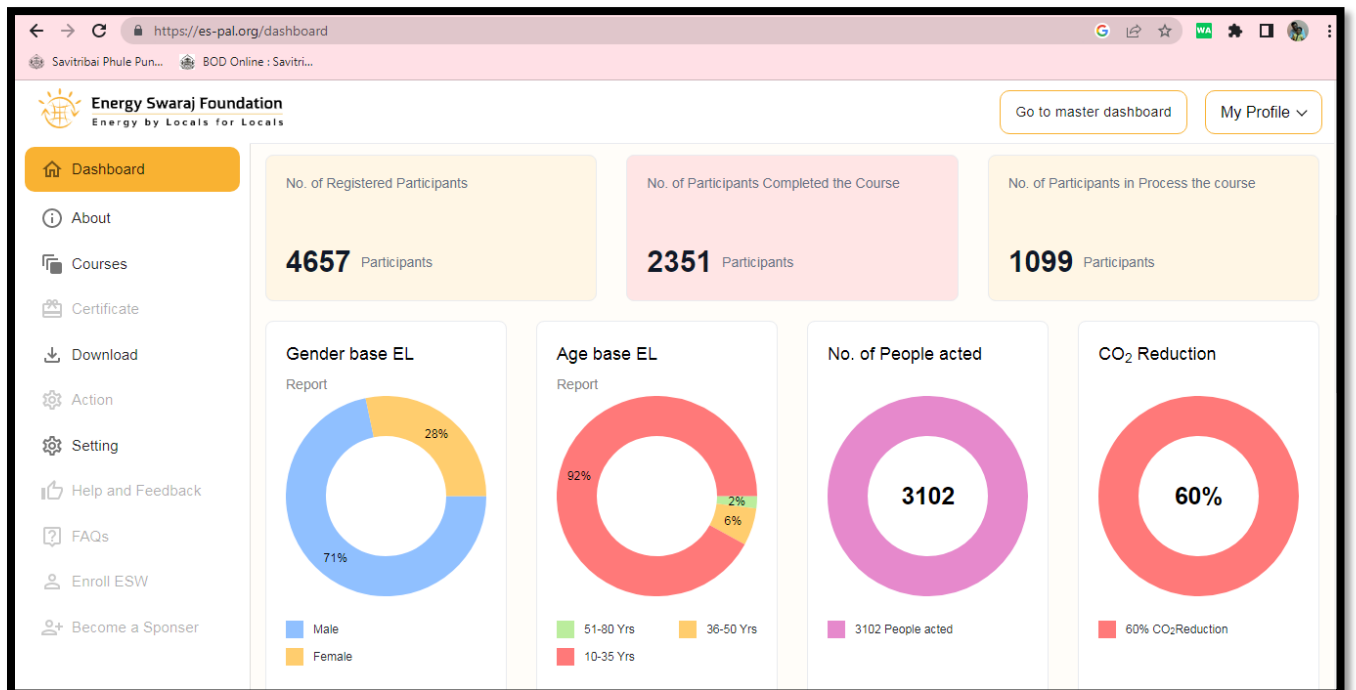



PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

Energy Literacy Training (ELT) completed by AISSMS College of Engineering, Pune



Status as on date: 02.02.2024



Have you experienced a change in climate?



The climate is not changing, it has changed. Every year, climate change is worsening. National and international efforts to mitigate it are insufficient. The rate of global warming (climate change) and associated events like rising sea levels, heatwaves, cyclones, floods, droughts, forest fires are ever-increasing, resulting in ever-increasing troubles for humans.



Why has the climate changed?

Modern human life is driven by energy. Over 80% of the world's energy requirements are fulfilled through use of carbon-based fuels like coal, oil and gas. These fuels are made out of carbon and use in the form of petrol, diesel, LPG, cement, materials, products results in CO₂ and greenhouse gas emissions. These greenhouse gases are causing heating of the planet, which has changed the climate.




PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



Who is responsible for climate change?

Every use of energy (petrol, diesel, LPG, electricity) and material (cloths, toothpaste, furniture, cement, etc) contributes to climate change, and therefore, every person, irrespective of rich or poor, American or Indian, contributes to global warming climate change.



When to start climate corrective actions?

Now, immediately. According to scientists, we must limit global warming to less than 1.5°C mark ideally or maximum of 2°C. Beyond this climate change will become irreversible, and corrective actions will be ineffective. More floods, more droughts, more forest fires, more heat waves and more troubles to humans will become a norm. It is now or never kind of a situation. As per the world climate clock, only **6 to 7** years are left before the global temperature touches the 1.5°C mark. Act now!




PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



What can an individual do?

Every individual is contributing to climate change therefore every individual must take part in corrective actions. The efforts for mitigating climate change cannot be restricted to just governments or organizations. Each individual should become fully aware of the dangers of climate change and then start taking actions immediately.



Why Energy Literacy?

Energy is the main culprit of climate change because more than 80% that we use comes from coal, oil and gas. It is important to know the basics about energy usage and its negative impact on the environment. Similar to needing a driving license to drive a vehicle, **Energy Literacy is like a license to use energy.** Without this license we are ignorant and causing harm to ourselves



PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

and putting the lives of the young generation at a great risk. Therefore **Energy Literacy is first step towards climate correction.**



What is Energy Literacy Training?

Energy Literacy Training includes the understanding of energy generation, its consumption, its use, misuse and inefficient use, opportunities to conserve energy and generate clean energy. It includes 12 modules of 15 minutes each. The training can be taken in online as well as off-line mode. Each module is enjoyable and engages with participants by means of examples, exercises and simple multiple choice questions. Each training module is divided into four sections or four “E”s, as listed below:

- Section - 1: Establishing the concept of a given module (5 to 8 min)
- Section - 2: Example to clarify the module concept (3 to 4 min)
- Section - 3: Exercise for strengthening the grasping of concept (2 to 3 min)
- Section - 4: Examination to check the understanding of the concept, 5 multiple choice questions (MCQ) (2-3 mins)

Energy Literacy Training would help individuals as well as institutions to achieve Sustainable Development Goals (SDGs) number 7, 12 and 13.




PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



Who should become Energy Literate?

Anyone and everyone who uses energy should become Energy Literate. In the modern world, everyone, rich or poor, young or old, American, African or Indian is a user of energy. Therefore everyone should become Energy Literate. Schools, Colleges, Industry, Society, NGOs, Government Organizations, Spiritual Organizations, everyone, needs to ensure that their people are Energy Literate!




PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



Outcome of Energy Literacy Training

Having gone through Energy Literacy Training, a person is expected to become energy sensitive and knowledgeable about

- How much energy is being used?
- From where the energy is coming from?
- What is his/her carbon footprint?
- What are the impacts of energy use on the environment?
- What are alternatives?
- What is the best approach for energy generation and consumption?
- What would be the size of the solar system for fulfilling their own needs?, etc




PRINCIPAL
ALL INDIA SHRI SHRI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



Benefit of Energy Literacy Training - saving money and environment

The training makes users of energy a sensitive user. Without putting notices to appeal 'save electricity' reduction in electricity consumption by home and organizations is seen. For example, after imparting Energy Literacy Training to their employees, All India Council for Technical Education (AICTE) , the regulating body of Government of India, started saving about 20,000 to 22,000 units of electricity every month. It is seen that an Energy Literate user uses energy more carefully. It results in reduced energy usage and therefore not only helps in saving electricity bills but also reduces carbon emission. Each unit of electricity saved is saving about 1000 grams of CO₂ emission.



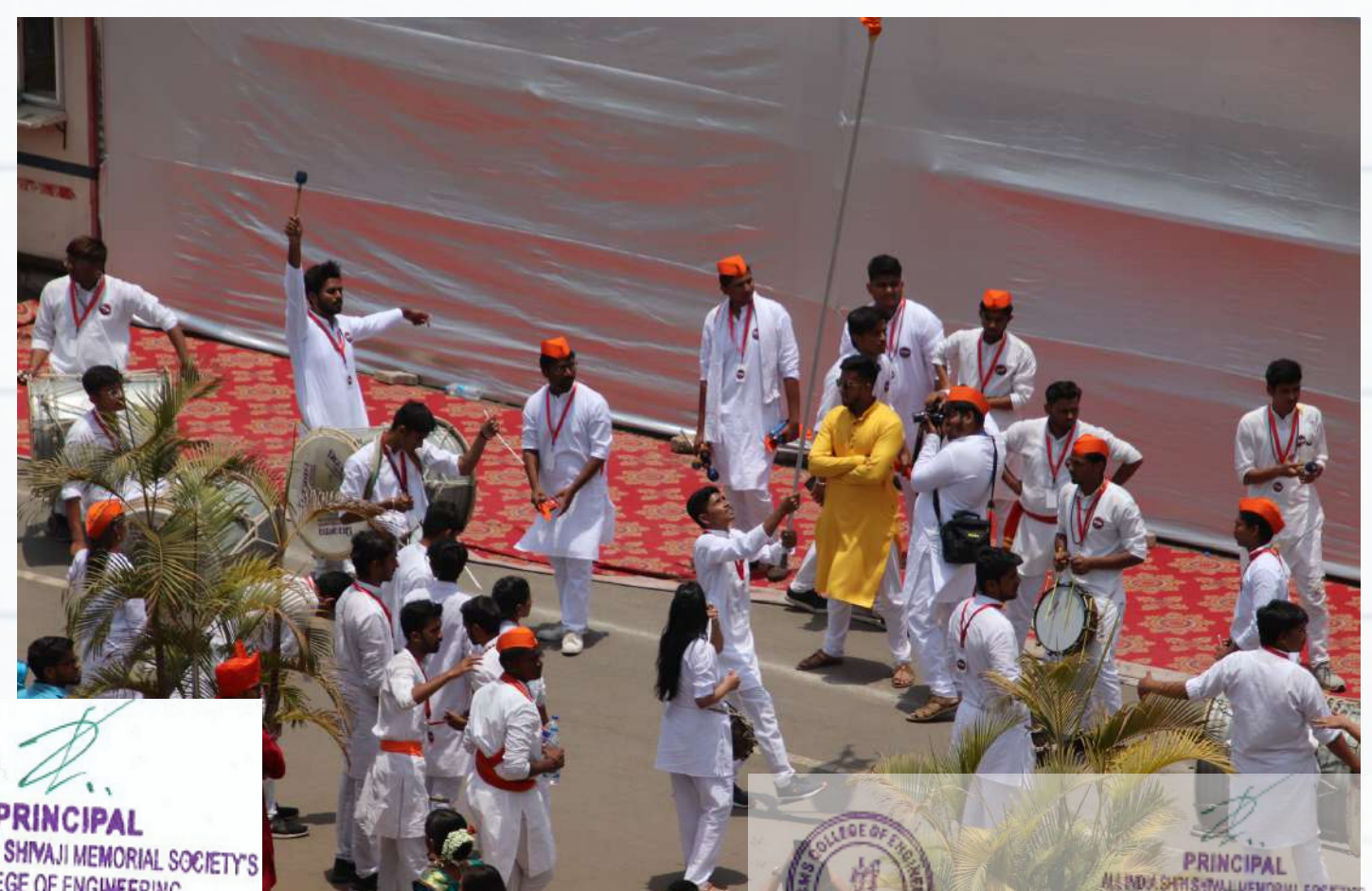
PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001

SHIVANJALI 2023

The cultural students along with General Secretary Association Members have successfully organized as well as managed the college annual function 'Shivanjali2023'. This year, the annual event was a grand affair. The event took place on the 27th and 28th of February, 2023.

The chief guest for the evening was the famous Marathi actress Miss. Hruta Durgule and the Honorary Secretary of AISSM Society, Shri Malojiraje Chhatrapati, as well as dignities of the A.I.S.S.M. Society.



PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001



PRINCIPAL
ALL INDIA SHRI SHIVAJI MEMORIAL SOCIETY'S
COLLEGE OF ENGINEERING
KENNEDY ROAD, PUNE-411 001