

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY
MECHANICAL ENGINEERING DEPARTMENT

2016



Core Committee Members 2016-2017

1. Faculty Advisor : Mr K Sunil Kumar Reddy
2. Faculty Advisor :Mr D S Nagaraju
3. Student Chairperson : S Vamsi Kiran
4. Student Vice-Chairperson : S Sridhar
5. Student Secretary : Subash Reddy Kolan
6. Student Treasurer : G Rakesh Kumar
7. Student Documentation Chair : G Tharun Kumar
8. Student Publicity / Marketing Chair : Sai Nikesh

REPORT ON BASIC AUTOMOBILES 2016

Workshop on Basic Automobiles:

On 25th January 2016, a workshop was organized on basic Systems of Automobiles by BAJA team members. In this students were taught about the various systems in the automobiles and their working principles. The students were exposed to hands on experience on all systems of automobile after having theoretical inputs.



Dr.U.S.Jyothi (Faculty adviser) addressing students



REPORT ON EFFI-CYCLE 2016

SAE EFFI-CYCLE Event Report 2016

Faculty Advisor : K.SUNIL KUMAR REDDY

Captain: SARA NITHIN

Vice Captain: SANDANA AJAY KUMAR

“EFFI-CYCLE” derived from Efficient- cycle promote the objective of providing opportunity to the students to conceive design and fabricate a three wheel configuration vehicle powered by human-electric hybrid power and capable of seating two passengers catering to day to day mobility needs. The vehicle must be aerodynamic, engineered for performance, safety and ergonomically designed. The objective is to promote innovation and generate consciousness among amongst the young engineers towards environment friendly mobility solution.

SAE NIS EFFI-CYCLE is an intercollegiate design competition for undergraduate and graduate engineering students where team of 6-10 students have to design and fabricate an energy efficient Hybrid human powered three wheeled electric vehicle.

This event provides opportunity for the engineering students by setting up the trend of using eco-friendly vehicle in India and come up with some innovative designs.

The vehicle should be capable to be driven simultaneously as well as alternatively by two drivers and also run simultaneously or alternatively on electric drive.

SAENIS EFFICYCLE 2016 event held from 12th October 2016 to 16th October 2016 at Lovely Professional University, Phagwara (Punjab).

- **Day 0(Oct 12):** On this day registrations for Effi-cycle teams are done from 9:00 am to 12:30 pm. Team captain should register all his team members with valid ID proof and SAE membership cards and get event ID cards. He also register for drivers with valid 2/4 wheeler driving license and medical insurance
After lunch, technical inspection (safety check) is started from 1:00 pm to 6:00 pm.
In this inspection, every team had to present their vehicle with Technical inspection sheet signed by their local mentor.

Here vehicles are checked for safety by technical inspectors (usually employees of Maruti Suzuki). They check for driver’s safety, vehicle ergonomics, standards provided in their rule book etc. Every team has three chances to clear this round.

- **Day 1(Oct 13):** On this day, technical inspection is continued. And teams who qualified safety check, can go to electric drive inspection, where they check electric drive system of vehicle. After this, vehicle is allowed to participate in Fig of 8, brake test. All these started from morning 9:00 am to 6:00 pm. In Fig of 8 test, vehicle

steering is tested by driving in large 8 figure. It should pass this test in both manual and electric drive.

Now vehicles are allowed to brake test. In this vehicle brakes are tested by applying brakes after allowing vehicle to acquire certain speed. If all three wheels are locked at same time with minimum braking distance, braking test is passed. This test also checked in both manual and electric drive conditions.

- **Day 2(Oct 14):** On this day, technical rounds are continued from 9:00 am to 6:00 pm. Simultaneously static events are also started. These events include Design evaluation, build quality evaluation, cost evaluation and marketing presentation. All teams should present their vehicle in Design evaluation, build quality evaluation and cost evaluation. Marketing presentation is done separately. Simultaneously Dynamic events are also started from 11:00 am to 6:00 pm. It includes Gradient Test, Acceleration Test, Utility Test, and Maneuverability Test.

In gradient test, vehicle has to climb a slope of 45 degrees inclination.

In acceleration test, acceleration power of vehicle is observed.

In utility test, vehicle has to run with 20 kg weight.

In Maneuverability Test, steering of vehicle is observed.

Every team has three chances to complete these tests but only if they cleared technical inspection.

After 6:00 pm, Inaugural & Cultural Events where started till 8:00 pm.

- **Day 3(Oct 15):** On this day, all static and dynamic events are continued from 9:00 am to 6:00 pm. Technical inspection closed at 1:00 pm. And all other events are closed at 6:00 pm.
- **Day 4(Oct 16):** On this day, Endurance run is conducted from 9:30 am to 11:30 am. All teams who qualified the above events are only allowed for endurance run.

After this, Valedictory Ceremony is done 2:00 pm to 4:00 pm. In this they announced the winners and runners teams list and presented awards and cash prizes to teams.





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MECHANICAL ENGINEERING DEPARTMENT

2015

SAE Collegiate Club

About SAE

Society of Automotive Engineers in INDIA is India's leading resource for mobility technology. SAE INDIA is an affiliate society of SAE International registered in India as an Indian non profit engineering and scientific society dedicated to the advancement of mobility industry in India, which includes the participation of Engineers, Executives from Industry, Government Officials, Academics and Students.

SAEINDIA is a professional engineering society whose membership represents practically every engineering and scientific discipline. Its members combine their specialized abilities to further advance the research, development, design, manufacture and utilization of vehicles which operate on land, water, air and space.

Formation of SAE Student Chapter

Students from the Department of Mechanical Engineering became SAE student members and established a Collegiate Club (Student Chapter) at GRIET in the year 2014. This student chapter started out with 53 student members and two faculty advisors, most of whom are currently studying to become the engineers of tomorrow.

The main purpose of this chapter is to disseminate of knowledge of the theory and practice of all aspects of design, manufacturing in automotive engineering, aerospace engineering and to enable the furtherance of professional development of the students. In the year 2015 the strength of the students increased to 114 which is a great boost to us.

Objectives

The objectives of SAE-GRIET Student Chapter are:

- To continuously enrich knowledge base of practitioners in mobility Industry and Institutions in the service of humanity.
- To enhance the knowledge base of members who are mobility practitioners within India.

- To provide its members access to SAE International programs and services enabling them to practice world class standards in productivity and quality.
- To develop technical and scientific reports and engineering standards for the benefit of mankind.
- To provide a forum for members to informally exchange views and ideas.

Projects

In SAE Collegiate Club Students do a lot of research and many projects.

SAE BAJA

Every year, SAE INDIA hosts national event **BAJA** across the country to give teams the opportunity to see how their vehicles compare with other universities from all over the country and from other countries as well.

The primary objective of BAJA is to design, build, test and race a reliable off-road vehicle that serves as a safer alternative to ATV's and dirt bikes. The price of the vehicle must also be comparable to other vehicles on the market with the same capabilities.

For this project a team of 25 students were selected from the SAE Collegiate Club to represent the college in the competition.



Faculty Advisors 2015 -2016

- 1) U S Jyothi
- 2) K Sunil Kumar Reddy

Team Bruiser Heads

- | | |
|--------------------------|---------------------------|
| 1) Vinay Kumar (Captain) | 2) Sundeep (Vice Captain) |
| 3) Ganesh | 4) Venkata Krishna |
| 5) Prashanth | 6) Sandeep |
| 7) Sameera | 8) Ravi Teja |
| 9) Mani Sarath | 10) Druva |

11)Akhil

13)Nikesh

15) Sridhar

17)Rajshekar

19)Manil

21)Raghu

23)Rakesh

25)Hari Kumar

12)Vamsi

14)G.Manikanta

16)Dinesh

18)Subash

20)Nithin

22)Manikanta Somasunder

24)Tharun Kumar

Advanced Braking System Workshop

On 24th March, 2015 we had another workshop on the Braking Systems by **S P Sambasiva Rao** (Area Manager at WABCO India Ltd.).The workshop was about the working of brakes in the automotives and the future technology. It was a learningexperience and skillful workshop. It was a great start for our new members.





2014

Faculty Advisors 2014 -2015

- 1) B Ch.Nookaraju
- 2) US Jyothi

Events

SAE Collegiate Club GRIET offers members well organized programs and activities to enhance their skills and practical knowledge.

RoboTryst

Under this, we conducted an **Automobile and IC Engines workshop** named **RoboTryst** for two days on 26th and 27th of September, 2014. RoboTryst is a International Level Automobile Workshop and Championship organized by Robosapiens Technologies Pvt. Ltd. in association with Tryst, IIT-Delhi. In this students were taught about the various systems in the automobiles and their principles. The students were pretty much excited to be a part of this workshop. After the workshop there was an examination and two teams were selected for the further rounds.



