GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

Student Chapter / SAE

About Us: The student body of Gokaraju Rangaraju Institute of Engineering and Technology is encouraged to associate themselves with this world-renowned organization through the SAE local chapter.

Aim: To advance mobility knowledge and solutions for the benefit of humanity. SAEINDIA GRIET COLLEGIATE CLUB is the leader in connecting and educating mobility engineers to enable safe, clean, and accessible mobility solutions.

Objectives:

- To make the students involve in the practical experience of the projects.
- To showcase their talent in static and dynamic events of various competitions and to have a great exposure all over the nation.
- To inculcate a sense of teamwork and responsibility by encouraging them to organize events.
- To make them acquainted with various useful technologies by conducting workshops.
- To enhance the importance of communication skills and thereby encouraging the members in it by conducting events and participating in the competitions.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

2020

Mr. K. Sunil Kumar Reddy
SAE Faculty Coordinator

Core Committee Members 2019-2020

Kesari Neeraja
Chair Person

Nunna Dhruthi
Treasury

Thammu Rakesh
Publicity Chair

Mallikanti Mahesh
Membership Chair

Ahmedullah Farooqu
Secretary

List of SAE Students 2019-2020

S.No	First Name	Last Name
1	SaiKiranChowdary	Kuchipudi
2	Vamshi	M
3	Sai Ganesh	Sriram
4	Swetha	M
5	MdMustabeen Khan	Khan
6	Nikhil Chand Gupta	Madamshetty
7	Mohammed A	Farooqui
8	Rithesh Kumar	Boda
9	Nutan Kumar	Uppala
10	Rohithdatta	Yerramsetty
11	Gitanjali	Veernapati
12	Sai Krishna	Turangi
13	Vineeth Raj	Tappa
14	MdMaibu Pasha	Pasha
15	Deepika	Balla
16	Hari Krishna	Siram
17	Chinnu	Arulmani
18	Dhruthi	Nunna
19	Neeraja	kesari
20	Sarala	Beema
21	Lakshmi Deepak	Tadepalli
22	Chilukuri Naga Vamsi	Chilukuri
23	Anirudhchowdary	Tummala
24	Vamshi	M
25	Mohammed Nawaz	Khan
26	Vamshi Krishna	Sundalam
27	RakeshRoshan	Thammu
28	SaiSanthosh	Kotha
29	UdaySiddarth	Kannoju
30	Gayathri	Edara
31	Sundeepkumar	Baja
32	Shreshta	Alla
33	SaiSankalp	V
34	Anvitha	Goli
35	Harichandana Reddy	Duvvanthula
36	Sandeep Kumar Rao	Surabi
37	Sonika	Choudary
38	Shashir	Chintha
39	Siva Kumar	Sundara
40	Akhila	Nadimpalli
41	Shiva Ganesh	Balde
42	Abhishek Reddy	Athelli
43	Chirudep	Abhimalla
44	Asif	Shaik
45	Akhil Reddy	Vutla
46	Ajay Kumar	Sabbani
47	Geethasree	Pisini
48	Mansi	Jagtap
49	Rahul	Peraka
50	Siddhardha	Duggineni
51	MD.Taj	Mohammad

REPORT

ON

BAJA SAEINDIA 2020

List Of Members

S.no	Name	Roll number	Role
1	S. Sai Ganesh	17241A03A9	Team Captain
2	M. Nikhil Chand Kumar	17241A0328	Vice Captain
3	Md. Mustabeen Khan	17241A0390	Chassis Lead
4	U. Nutan Kumar	17241A0356	Braking Lead And Driver
5	Y.Rohith Datta	17241A0360	Transmission Lead And Driver
6	Maibu Pasha	17241A0332	Transmission Lead
7	B. Rithesh Kumar	17241A0344	Suspension
8	T. Sai Krishna	17241A0352	Manufacturing
9	Ahmedullah Farooqui	17241A0333	Braking
10	Sai Kiran Choudary	17241A0322	Braking
11	M. Swetha	17241A0326	Suspension
12	V. Gitanjali	17241A0357	Steering
13	T. Vineeth Raj	17241A0354	Manufacturing
14	Vamshi Chinna	17241A0387	Manufacturing
15	E.Gayatri	18241A0378	Chassis
16	Sonika Choudary	18241A0373	Transmission
17	Hari Chandana	18241A0377	Braking
18	S. Vamshi Krishna	18241A0348	Chassis
19	Santhosh Rao	18241A0332	Chassis
20	Sankalp	18241A0356	Suspension
21	Uday Siddarth	18241A0390	Braking

SAEINDIA BAJA 2020

SAEINDIA BAJA 2020 is a National level competition event, in which the teams are to present their buggy to a society of highly experienced judges who hail from eminent companies followed by Static events, Dynamic events and an Endurance Run where we get to showcase our talent to different experts and sponsors. It is a 7- day event took place from 22nd January, 2020 to 28th January, 2020 in NATRAX, Pithampur, Madhya Pradesh. Around 120 teams from m-Baja and 50 teams from e-Baja hailed from all over India for the event, after qualifying Virtual Round which was conducted by them in the month of July.

Event Details

BAJA SAEINDIA 2020.

22nd to 28th of January 2020.

NATRAX, Pithampur, Madhya Pradesh.

At The Event

A team of 21 people visited the event. We have been informed about the schedule of all the events which would take place in the event and planned them accordingly as follows:-

- **Day 0:- Team Registration and Technical Evaluation.**

All the teams who have qualified Virtuals Baja are eligible to register here in the event site. We have registered our team under our college ID by 11:45 am. We have started unloading our equipment and vehicle was ready for Technical Evaluation by 2:30 pm. In the Technical Evaluation Bay, we have been pointed about equipment confirmation issues and were postponed to the next day.

- **Day 1 :- Technical Evaluation, Engine Check and Static Events**

As the Static events are divided into two categories:-

1. **Sales Event**: - We were given a slot to the event bay at 12:00 pm and were asked to present a start-up on an All-Terrain Vehicle to a group of investors and sales managers from different companies. We cleared the event by 12:50 pm and the investors were really interested with the plan we proposed.
2. **Cost Event**:- In this event, we have to show the judges the Market survey made and implemented on the vehicle to reduce the cost of an ATV as low as possible so that there are no compromising issue when it comes to performance. We have attended the cost evaluation pit by 2:15 pm, with the vehicle and were asked different many questions regarding our market survey and the proofs regarding our vehicle's manufacturing activities. We have ended the session by 3:00 pm and the judges were satisfied with the analysis we made.

We have qualified Engine check by 4:20 pm and Technical Evaluation was delayed to the next day, as the equipment issue was not yet cleared.

- **Day 2 :-Technical Evaluation and Design Presentation**

We have cleared Technical Evaluation by 10:30 am and attended the Design Presentation at 11:00 am. We have explained all the technical and design considerations and were asked to provide a justification to each and every consideration we made. We have cleared the event by 12:30 pm.After that we went for weight check and our vehicles weight was 169.7 KG

- **Day 3 :- Brake test**

We were issued Brake test tokens for two attempts. For the first attempt, we couldn't clear out test as our Front-Right Tyre was rotating after applying brakes. We performed different iterations by tuning shock absorbers, different Tyre pressures and patterns, Brake pressures and biasing. We did not give a second attempt on that day, as we have spent most of our time in practice sessions.

- **Day 4 :- Brake Test and Dynamic Events**

We cleared the brake test by 10:30 am. We were ready for all the dynamic events by 11:00 am. We have participated in different dynamic events as follows:-

1. **Acceleration**: - We tuned all suspension components in such a way as we attain highest acceleration. We completed the test by 11:50 am and achieved 120ft in 4.9sec making us stand in 26th position.
2. **Suspension and Traction**: - We were ready for this track by 1:20 pm. It was the toughest track in the whole event. Our vehicle completed the track 4min 51sec which included two roll - over's and was given DNF for the test. We have completed the test by 1:45 pm.
3. **Maneuverability**: - We have attempted the test at 2:00 pm. We couldn't complete the test in two attempts as all the 4 tires went out of the given path
4. for the first and touched the boundaries for 3 times which gave us DNF for the test. We have completed the test by 4:50 pm.
5. **Rock Crawl**: - We have attempted the test at 5:10pm and performed two. The distance we covered in the path are 9m and 10.5m.we completed the test by 5:30 pm.

The Vehicle transponder and driver registrations were completed. The Endurance tracks are shown to the team members and the drivers, and also announced the main rules of the endurance race.

- **Day 5 :- Endurance Run**

Endurance Run is the vigorous test to any ATV, where the true ability of vehicle stands out. It is 4-hours continuous run through the hardest terrain. For this, the vehicle was assembled in the grid by 8:30 am. There was a Flag hoisting ceremony at 9:30 am, as it was on Republic day. The race began at 11:10 am. Our vehicle had a breakdown after 3 laps and was delayed for 28 min in the whole lap time. Our vehicle has covered 15 laps and has completed the race by achieving 39st position. Then we have a Valedictory event at the last and the prizes were distributed to the winners.

Drawbacks

- Need to increase ground Clearance
- Weight Reduction to attain high speed in less period of time
- Driver training.

Conclusion

The event has given us a vast knowledge regarding Industrial approach and helps us out to stand out in National Competition, giving us scope to evolve and learn different designs and methodologies in different systems. We are proud to be a part of this competition and can assure that we can perform better than the previous one.

Transport And Accommodation Details

- We started on 19th January, 07:00 pm from Hyderabad
- We reached Indore on 21th January, 3:00 pm
- We stayed in OYO Hotel Indraprasth from 21th January to 29th January
- We returned on 29th January and reached Hyderabad on 30th January, 12:30PM.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

2019

REPORT ON

VIRTUAL BAJA SAEINDIA 2019

List Of Members

S.No	Name	Roll Number	Role
1	S.Sai Ganesh	17241a03a9	Captain
2	M.Nikhil Chand Kumar	17241a0328	Vice Captain
3	Md.Mustabeen Khan	17241a0390	Chassis Lead
4	U.Nutan Kumar	17241a0356	Braking Lead
5	Y.Rohith Datta	17241a0360	Transmission Lead
6	Mahboob Pasha	17241a0332	Transmission

Virtual Baja

Virtual BAJA is a national level presentation event, in which the teams are to present their design of the vehicle to a panel of well experienced judges from eminent companies followed by test on basic Mechanics and Automobile Engineering. It took place in the month of July, in

Chitkara University, Chandigarh Around 350 teams all over India registered for the event. Of which, 120 teams will be selected for the next level of the competition.

Event Details
VIRTUAL BAJA SAEINDIA 2019.
11th to 13th of July 2019.
ChitkaraUniversity, Rajpura campus, Chandigarh

At The Event
A team of 6 people visited the event.

- We registered for the event on 11th July.
- We attended examination on 12th July.
- We presented out ppt as scheduled on 13th July.

At The Exam
The exam is scheduled at 12:00PM.We reached examination hall by time and registered for it .Because of 10mins delay the exam completed by 12:40 and we started preparing for presentation.

At The Presentation
Our presentation was started at 2:30PM on 13th of July, due to 1 hour delay.In,the first 20mins we completed our Presentation and were ready for Viva session. The main queries in Viva session were about CAE, SUSPENSION, STEERING, DFMEA. We answered all the questions and completed presentation round.

Transport And Accommodation Details

- We started on 9th July, 10:30PM from Hyderabad
- We reached Chandigarh on 11th July,1:00PM
- We stayed in New life hotel from 11thJuly to 13th July
- We returned on 14th July and reached Hyderabad on 16th July8:00PM.

REPORT ON SAE INDIA AERO DESIGN CHALLENGE 2019

TEAM No: ADC201901

List Of Members

S.No.	Name	ID Number	Phone number	Designation
1.	Lakshmi Deepak	16241A0397	9490904106	Captain
2.	Kesari Neeraja	16241A0333	8639821552	Treasury
3.	T. Vineeth Raj	17241A0354	7799111829	Wing
4.	Hari Krishna	17241A0349	8106656308	Wing
5.	A. Chinnu	17241A0361	7032738329	Tail
6.	N. Dhruthi	17241A0396	8978811299	Fuselage

Event Details
SAE AERO DESIGN CHALLENGE EVENT 2019
19th to 21st July, 2019
SRM University, Kattankulathur Campus, Chennai.

At The Event

- **Day 1:-19-07-2019**

We have reached the venue at around 8:00 a.m. and the first thing we did was to register ourselves for the event. We were handed over the papers that described the schedule for the entire three days of the event and slots for Technical presentation, Technical inspection and flight rounds. Our technical presentation was scheduled on the afternoon of the same day, i.e. 1:30 p.m. and Technical inspection was scheduled in the evening, i.e. 5:00 p.m. Our flight roundhasbeenscheduledto10:00a.monthesecondday.Theinaugurationceremonyhasbeen started at 11 in the morning. As soon as the inauguration ceremony has been closed we have rushed to the presentation hall by 1:00 p.m. We have completed our Technical presentation by 3:00 p.m. Then we started to arrange our fight and cleared our Technical inspection without any problem by 5:30 p.m. Then we headed back to our hotel. We were not allowed to take pictures during technical presentation and inspection.

- **Day2:-20-07-2019**

  The regular class aircrafts were flown in Green Pearls Electronics ground which is 2 kilometres away from S.R.M College. We have reached the S.R.M main gate by 8:00 a.m. We were provided special busses by the institute to reach the flying ground. We have reached the ground by 8:30 a.m. and started to assemble our flight without any further delay as we were in short of time. Since, there was a delay in starting off Flight round our flight was flown at 3:00p.m. in afternoon. They have checked CG and the payload inserted before flying. Our flight has taken off successfully and was in cruise for 2 rounds and landed very safely. There was little deformation in the landing gear only. Other than that our flight did not undergo any damage. The overall performance of the aircraft was given and was very stable. After the flight round we returned back to the hotel.

- **Day 3:- 21-07-2019**

  Few teams had their flight round scheduled on the morning session of the final day. All the teams have completed their flight round by 1:30 p.m. The closing ceremony was scheduled at 3:00 p.m. on the final day at Faraday Hall of SRM University. The team has reached the venue on time. The chief guests have arrived on stage and gave their lectures. After that the winners were announced and given momentous. Unfortunately, our team did not get any prize despite of performing well. We will try our level best and perform better the upcoming year.

SAEINDIA
Society of Automotive Engineers INDIA

Report On SAE ETWDC EVENT-2K19

List Of Members

S.no	Name	Roll number	Role
1	P.Rahul	17241A03A1	Captain &chassis head and designing
2	S.Ajay	17241A03A6	Vice-captain and procurement
3	D.Sidhardha	17241A0375	Suspension head and manufacturing
4	Sk.Asif	17241A03A8	Suspension and procurement
5	V.Akhil	17241A03B7	Braking and manufacturing
6	B.Shiva Ganesh	17241A0367	Braking and procurement
7	A.Chinnu	17241A0361	Transmission head and designing
8	M.Mahesh	17241A0381	Transmission and procurement
9	K.Bhavesh	17241A0386	Transmission and manufacturing

SAE ETWDC-2019

SAE Electric Two Wheeler Design Competition is a national level event conducted by Society of Automobile Engineering Indian Southern Section. For this event we need to present our design of our electric vehicle and our vehicle had to undergo different tests. The event took place in the on the of September, in Bannari Amman institute of technology, Erode, Tamil nadu.67 teams have participated for this event.

Event Details

SAE ETWDC-2019.
27th to 29th of September, 2019.
Bannari Amman Institute of Technology, Erode, Tamil Nadu.

AT THE EVENT

- **Day 1:- (27/09/2019)**

On day-1 we registered our vehicle by 9am and then the event started in a seminar hall by introducing guests and their interest on E-bike competition. They informed to announce on release of schedule on the complete event after the completion of seminar. After 12'o clock the schedule was released and the tests in the schedule are as follows

- Registration
- Inauguration
- Event briefing
- Exhibition of the vehicle
- Technical presentation
- Technical inspection
- Range test
- Brake test
- Gradeability
- Maneuverability test
- Bump test

After the inauguration and event briefing exhibition of the vehicle was do. Where different judges for different test visited all the vehicles which were present in the pits. Then the competition started. After that our team split into 2 groups of 4 and 5 members.one visited the inspection panel and the other visited the presentation panel. The inspection group visited the inspection panel around 2pm and had to undergo 5 rounds those where weight measurement, aesthetics, design report, vehicle stability and innovation. Our vehicle has cleared all the inspection round. The presentation group visited the presentation panel by 3pm.

After the completion of the inspection round and presentation round, our vehicle had to undergo the range test and we are proud to say that our vehicle has only consumed 0.9volts for completing 4.5km

run. By that our day-1 was completed.

- **Day 2:- (28/09/2019)**

  On day-2 of the event started with brake test of our vehicle. A track was prepared for that. They measured the stopping distance of the vehicle at maximum speed when the brakes are applied. Brake test was completed around 10:15am.

Next was maneuverability test. Maneuverability test was completed around 10:45am.

At 11:30am gradeability test was started. Two types of tests were conducted in a single track. First was to start climb the grade directly and the second was to climb the grade after gaining speed.

- **Day 3:- (29/9/2019)**

  Day-3 of the event started with the bump test. Here we had to complete 3 laps. Each lap had 28 speed breakers. If the any parts of the vehicle comes off or the rider takes the support of his legs or if he misses any speed breaker negative points were awarded for them. Bump test was completed around 10'o clock in the morning.

After the completion of the bump test, innovation report was done by 2 judges for every vehicle and innovation of the vehicle was to be them to them. That was completed around 1:45pm

Finally, the validetary function was conducted in the seminar hall. The prizes were distributed based by manager of the Ashoke Leyland and champion of the event Pradeep Kumar. Final results were displayed on the notice board after the validetary function.

REPORT ON MEGA ATV CHAMPIONSHIP 2019

List Of Members

Year: IV Section: A

Sno	Name	Roll No
1	G.Bharath Kumar	15241A0316

Year: IV Section: B

Sno	Name	Roll No
1	G.Madhu	15241A0385
2	M.Sai Kiran	15241A0397
3	P.Viswa Teja	15241A03A4
4	P.Vamsi Krishna	15241A03A5
5	S.Raghuveer	15241A03B0
6	Shaik.Naffiuddin	15241A03B2
7	S.Vaijayanth	15241A03B3

Year: II Section: A

Sno	Name	Roll No.
1.	M.Nikhil Chand Gupta	17241A0328
2.	Md.Maibu Pasha	17241A0332
3.	Ahmedullah Farooqui	17241A0333
4.	Rithesh Kumar.B	17241A0344
5.	Sai Krishna .T	17241A0352
6.	Nutan Kumar .U	17241A0356
7.	Rohit Datta .Y	17241A0360
8.	A.Rajkumar	18245A0301

Year: II Section: B

Sno	Name	Roll No
1	Mustabeen Khan	17241a0390
2	Sai Ganesh	17241a03a9

Mega ATV Championship

MAC(MEGA ATV CHAMPIONSHIP) began with the vision of setting a new benchmark for student design competitions held in India. GokarajuRangaraju Institute of Engineering and Technology has competed in this competition in the past under the name “Bruiser Heads”. The main aim of this event is to design,

manufacture and make an All-Terrain Vehicle (ATV) move within the restrictions set by MAC. Team Bruiser Heads works hard to build the best performing, economic vehicle and to be the number one team.

Event Details
17th to 20th March, 2019
Pernim,Goa.

At The Event

- **Day1(18.03.2019) Team registrations**
  The first day, "day zero", there were registrations. We got our pit and arranged our vehicle and tools in the allotted pit.

- **Day 2(19.03.2019) Dynamic events**
  We cleared our brake test at 1 pm after numerous attempts. After that, we are allowed to choose our own slots depending upon time factor and allowances. We planned and fixed the slots as follows:

- Drag Race is fixed as our first dynamic event and conducted on 1:00 pm
- Flat Dirt Race test is our second event held on 3:45 pm
- Armageddon test is the only track which was not finished by us

- **Day3(20.03.2019)**

Endurance Event

The last day of the event, we had endurance test of 1 phase. The track is around 9.5km in distance which includes all the test tracks of flat Dirt race, Drag Race. In the first two hours, we have made two laps by having breakdown because of dust in oil filter. By rectifying all the mistakes done, the rest one hour our vehicle was functioning good and made 9 laps covering 85.5km in distance. We stood 21th position in this event.

Conclusion

We achieved 21st position in the event out of 100 teams. We will be striving hard to gain better positions in the upcoming years.

REPORT ON AUTO JUGAAD 2019

Sae Autojugaad

SAE Autojugaad is an event conducted by SAE Collegiate Club, Mechanical Department, GokarajuRangaraju Institute of Engineering and Technology. The main objective of the event is to interact with members of SAE Collegiate Club and to bring all their efforts and struggles that they are coming across and to convey the advantage of doing SAE projects which bring our technical knowledge into reality .Here students from different projects like BAJA, AERODESIGN, E-BIKE present their design strategies and their way of planning to build their dream vehicle or Aeroplane .This event is held on August 17, 2019 at Mechanical Seminar Hall, GRIET.

At The Event

During Event, HOST invited our Guests Dean of Student Affairs,**Dr.L.Jayahari** and HEAD OF DEPARTMENT, **Dr.N. Sateesh**. The event started with wonderful speech by Dr.L.Jayahari spoke

about the importance of collaborating with SAE and use of doing the project which improves in developing practical knowledge and basic approach to design,build complete automobile. Next Dr.N. Sateesh took over and continued it with his valuable speech and spoke about converting theoretical knowledge into practical life. Then **Mr.K Sunil Kumar Reddy**, Coordinator of SAE Collegiate Club, motivated every individual to take part in projects, conveyed struggles of students to complete their project.

Dr. N Sateesh (HOD)

Dr L Jayahari, Mr. K Sunil Kumar Reddy, Dr. N Sateesh

Mr. K Sunil Kumar Reddy, Dr.L Jayahari
Dr. N Sateesh (HOD)

Participated students

After completing their valuable speeches host invited representatives from BAJA (Siddarth and Sivakumar)to take our event. Initially they started presentation with the history of SAE followed by Events organised under SAE. They also presented basic needs and project plans that are made by them to overcome obstacles and to build an All-Terrain vehicle which can run in all difficult and rough tracks. They also presented about the achievements which they secured .Finally their presentation ended up with a special video of their vehicle.

After completing BAJA presentation, host invited representatives from AERODESIGN (Vineeth and Chinnu).They started their presentation explaining the importance of Aerospace and then continued with basic knowledge of designing and building an Aeroplane. They also presented about the event of Aero design which was held a month ago and also their achievements .Finally they concluded their presentation with a video of their flight take off and their event.

After completing both presentation on BAJA and AERODESIGN, Deepak, member of AERODESIGN shared his valuable experience. He explained his complete journey with AERODESIGN and way he achieved all heights of being part with them. He also motivated members to take part and wished all SAE members to reach good heights.

And Finally Event came to an end by singing National Anthem.

JAI HIND!

REPORT ON MECHANO 2K19

MECHANO 2K19

The event has been conducted by SAE collegiate club, Mechanical Department, GRIET. The fest comprises of a three day events from 21st February to 23rd February.

At The Event

- **Day1:**
  On the 21st February, the fest has started at 9.30 am by welcoming the Principal, Head of Mechanical engineering, and Dean of Student affairs, coordinator of SAE club, professors and students. Our principal Dr. J Praveen, Head of the Mechanical Department Dr. N Sateesh , Dean of Student affairs Dr.L Jayahari and coordinator of SAE club Mr. K. Sunil Kumar Reddy has given their inspirational speeches about the importance of solid works and 3d printing for the practical world and in industrial appliances. They clearly explained the need of such workshops for our future and in development of our career. One of the main thing spoken was about the projects done by our collegiate club and also the progress and achievements of our projects. Their speeches were encouraging and motivating for upcoming students of our college. The inauguration was completed by 11.30am with lighting the lamp and a devotional song was sung by two students for the blessings from God Vinayaka. There was a lecture by Mr B. Krishna Mohan onsolid works till afternoon. After lunch there was a

practical lab session for students on solidworks. The other non-technical events treasure hunt and movie mania, and technical event AutoCAD competition has been conducted for the registered students. Thus, the first day was completed with support of the team and elders.

Principal Dr. J. Praveen addressing students

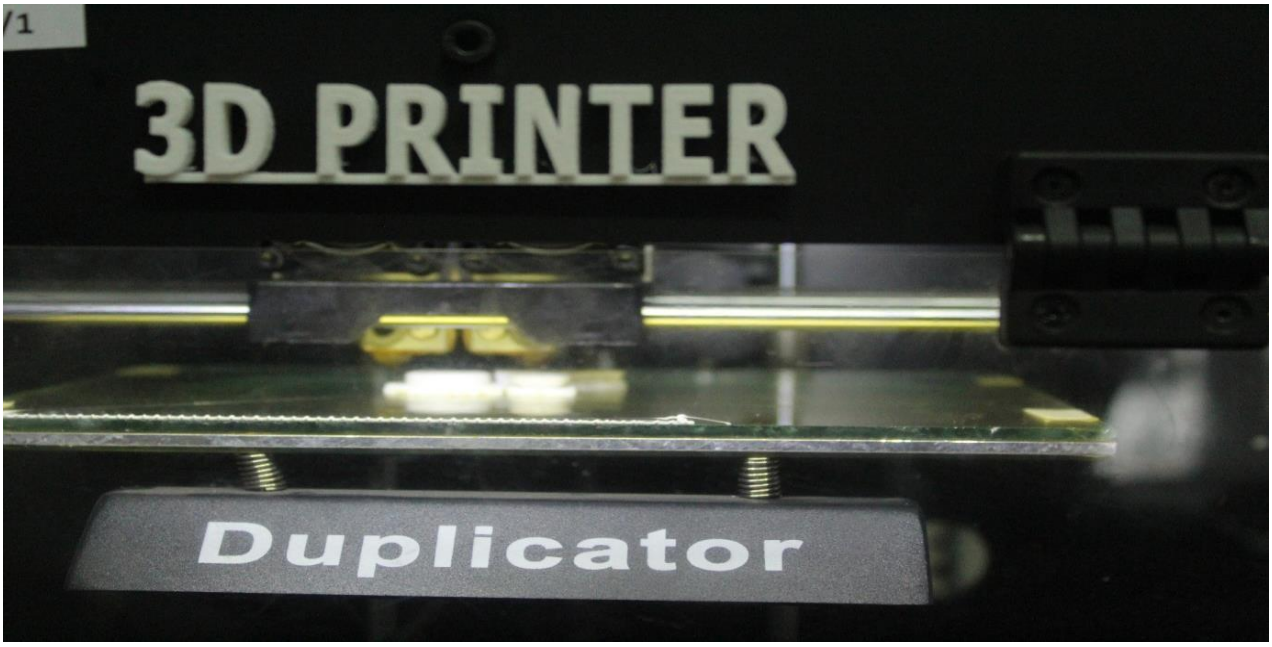
Left to right: K Sunil Kumar Reddy, Dr.N. Sateesh(HOD), Dr.J.Praveen (Principal), Dr. S K Singh, Dr. L Jayahari

- **Day2:**

  The second day, 22nd February was started with a lecture from Ashok Kumar sir, industrial resourced person. He explained about 3d printing, the mechanism involved in it and the way of obtaining 3d objects by using the appropriate machines. He also explained about the need of 3d printing knowledge and applications of it in various fields. He clearly explained about "why 3d printing is one among the technologies of 4th industrial revolution". From afternoon the attended students were divided into two batches, one for solid works and other for 3d printing. The non-technical event, quiz was also conducted on this day.

Mr.K Sunil Kumar Reddy -SAE faculty adviser

Mr. B. Krishna Mohan - Resource person

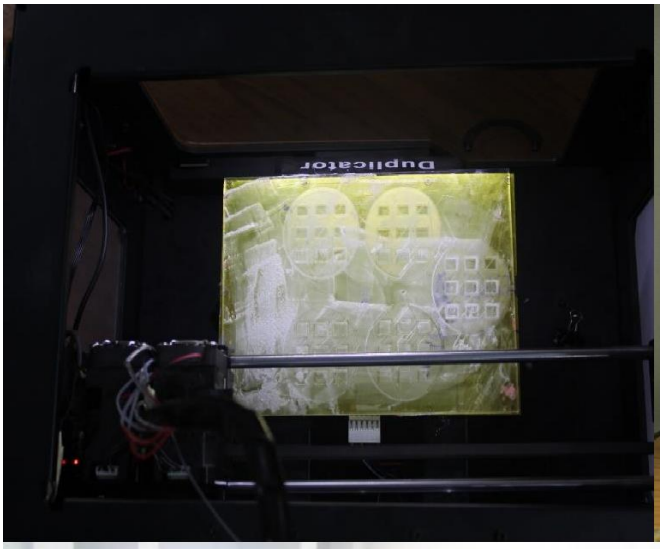


- **DAY-3:**

  The last day, 23rd February, one batch of students went for 3d printing and other for solidworks. Chess competition was also conducted in which many people shown there interest to participate and finally the event was ended in a gratitude way. The winners of the events are awarded, students seemed to be thankful and they are with a happy feeling that they have attained a great knowledge. The event was ended with a vote of thanks to all our professors, elders, students who have supported us in making our fest a grand success. The zeal of

gratitude was seen in the faces that have attended the fest. Thus the fest was ended and PUBG event was also conducted in the evening from 7 to 9pm.

Dr.N Sateesh (HOD), Dr. Ram Subbaiah awarding prize to students in an event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REPORT ON INDUSTRIAL VISIT TO MIYAPUR BUS BODY UNIT

SAE Collegiate Club's Industrial Visit to Miyapur Bus Body Unit on 14 December, 2019

Society of Automobile Engineering India Student Collegiate club in GokarajuRangaraju Institute of Engineering and Technology has organized an Industrial visit to Miyapur Bus Body Unit on 14 December, 2019 from 10:00 AM to 2:00 PM for the students of Mechanical Engineering (SAE Students).

The visit is organized with prior permission and guidance of our Head of the Department **Mr.N.Sateesh** and our Dean of Student Affairs **Mr.Jayahari**

Mr K Sunil Kumar Reddy was our faculty coordinator for the whole industrial visit trip accompanied by **Dr. Ravi Shekar**.

We have started from college at 9:30 AM (via college bus) and reached Miyapur Bus Body Unit by 10:00 AM. As soon as we reached, we met Mr.Srinivasulu, the Supervisor of the whole Bus Body Unit who got placed in there in the year 2007. He was our guide to the whole visit and took all the necessary actions and precautions during our visit. He explained about the necessity of this unit and the facilities available in the infrastructure. We learned the life cycle of a Heavy Transport Vehicle and basic design considerations made, in order to sustain any condition faced in the means of transport.

In the unit, all the sections are divided and put in well-organized manner such that, the processes that needs to be done, are taken in a specific manufacturing order which minimized the complexity experienced during their working hours. Their manufacturing and fabrication process of a bus has included many peaks and perks, on which they were facilitated with huge machinery and high employment. They demonstrated about how all the machinery works and at which process and purpose they were used. Their hospitality and response was very pleasing. At last we completed our trip at 2:00 PM. We returned to our college at 2:30 PM from the Unit.

This Industrial visit has given us major exposure to most of the present industrial approach and the factors considered while we make a forward step towards a decision. We learned how to improve their present technology present in the unit to an advanced state, thereby reducing their human effort and time efficiency. This has been a productive trip to all the students who attended the visit.

Gallery

SAE students visited Bus Body Unit at Miyapur along with Mr. Sunil Kumar Reddy (Faculty adviser) and Mr. Ravi shekar

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT 2018

Mr K. Sunil Kumar Reddy
SAE Faculty Coordinator

CORE COMMITTEE MEMBERS 2018-19

M. Naga Sai Durga Dinesh
Chair Person & Treasury

A. Sravika
Documentation

Lakshmi Deepak
Deputy Documentation

Kesari Neeraja
Deputy Treasury

Nikhil Chand Gupta
Manufacturing

List Of SAE Members

S.No	First Name	Last Name	Sae Membership Id
1	Raghu veer	Samsani	
2	Bharat Kumar	G	
3	Vaijayanth	Sheri	7180425265
4	Vamsi Krishna	Popuri	7180425240
5	Nafiuddin	S.K	7180425242
6	Sravika	A	
7	Sivani	Kanakam	
8	Naga SaiDurga Dinesh	Mikkilineni	
9	Akhil	A.O.S.S	
10	HariTeja	Appari	7180425239
11	Sachin sunder	Gowdiperu	
12	Sri sai	Koppisetty	
13	Wasifullahshareef	Mohammed	7180425283
14	ShehzadQaiser	Mohammed	7180425285
15	Akshaykumar	Ainavolu	7180425243
16	VenkataSai	Yenugula	
17	Naveen chandra	Kavuri	
18	Jaipal	Jadhav	
19	Mohammed	Salman Khan	7180425293
20	Ramayampet	Sachin Kumar	7180425294
21	Cherla	JagadeeshYadav	7180425279
22	Duddu	Deepak Chandra	7180425253
23	Gulli	Pranay Kumar	
24	Jaipal	Jadhav	7180425231
25	Madhu	Gottemukkala	7180425254
26	SaiKiran	Manne	
27	Daniel	Yarva	7180425244
28	VishwaTeja	Pogu	7180425245
29	Sainath	Panpatte	7180425257
30	Akhila	Gudise	7180425270
31	Shivani	Koppula	7180425247
32	Shruthi	Kammari	7180425277
33	Lakshmi Deepak	Tadepalli	7180425238
34	AnandaMithra	Gosala	7180425280
35	C Venkat	Lalith	7180425284
36	Venkata	SaiLokesh	7180425292
37	Thamatam	SaiTejaswini	7180425286
38	Dimple	Choudhary	7180425287
39	Bellamkonda	LikhitaSai	7180425281
40	Samaikhya	Medipally	7180425288
41	Sai	Varun	7180425290
42	Surya	Mikkilineni	7180425289
43	Sai Krishna	Turangi	7180425272
44	Harshit	Singh	7180425259
45	MD Mustabeen	Khan	7180425255
46	Sai Ganesh	Sriram	7180425258
47	Swetha	Madugula	7180425260
48	Rithesh Kumar	B	7180425252
49	Anirudh	Chowdary	
50	Niranjan	Martha	7180425295
51	Gitanjali	Veernapati	7180425262
52	Mohd	Wasim	
53	RohithDatta	Yerramshetty	7180425256
54	SomeswarRao	Salana	7180425251
55	Deepika	Balla	7180425232
56	Nutan Kumar	Uppala	7180425248
57	SaiKiranChowdary	Kuchipudi	7180425296
58	Nikhil Chand Guptha	Madamshetty	7180425263

REPORT ON ENDURO STUDENT INDIA 2018

Enduro Student India

Enduro Student India (ESI) began with the vision of setting a new benchmark for student design competitions held in India. GokarajuRangaraju Institute of Engineering and Technology has competed in this competition in the past under the name "Bruiser Heads". The main aim of this event is to design, manufacture and make an All-Terrain Vehicle (ATV) move within the restrictions set by ESI. Team Bruiser Heads works hard to build the best performing, economic vehicle and to be the number one team.

Event Details

The event took place from 3rd January, 2018 to 7th January, 2018 at Gedee Racing, Coimbatore. The event was divided into two parts, i.e., static event and dynamic event. The following report is a complete description of the event, in a day-to day wise manner.

At The Event

- **DAY 1- (03.01.2018) Team Registrations-**

The team's registration was done and the team members were provided with a band which was to be worn throughout the event. Drivers were given separate bands for identification. Also dynamic access coats were provided which were to be worn by team members in the hot pit, as it was the major rule that only people with dynamic access are to be allowed into hot pit and technical inspection.
Also, a pit was allotted for keeping the vehicle, tools and spares. The vehicle was arrived on the same day.

- **DAY 2- (04.01.2018) TECHNICAL INSPECTION-**The team was set for the technical inspection. Technical inspection is done to check if the vehicle met all the rules in the rule book without any violations. We were not able to qualify technical inspection in 1st attempt due to some minor errors.So the vehicle was taken to hot pit for fixing the errors.
- **DAY 3- (05.01.2018) STATIC EVENT-**Slots were given for static events. The static events consisted of business presentation, cost presentation and design presentation along with technical inspection. All the three events were allotted on the same day to our team.Business presentation was held around 10:30am followed by cost presentation at 4pm and design presentation at 5pm.Simultaneously, vehicle was taken to technical inspection after fixing the errors and we successfully passed the technical inspection.

Then the weight of the vehicle along with weight distribution was checked. Vehicle weighed 164.35kg, with a good weight distribution. We were able to decrease weight from 185kgs to 165kg i.e., from previous year vehicle to this year vehicle.
After technical inspection, the vehicle is taken to engine test. One of the main rules of this event is to use the engine specified in the rule book without making any changes in it. We qualified in the first attempt.

Then the next event was brake test. This test aimed at locking of all the wheels together without lag immediately after applying brakes. The first attempt was a failure as the front wheels did not lock immediately after applying brakes.

- **DAY 4- (06.01.2018) TECHNICAL INSPECTION-**

The second attempt was made for brake test and this time all the wheels got locked at the same time we qualified the brake test.

After static events, it was the time for dynamic events. The dynamic events consisted of acceleration test, maneuverability test, dirtx test. Only two attempts were given for each of dynamic events.
We initially attempted the dirtx test. Dirtx is a test where the track was made full of bends and sharp curves. In the first attempt, we could not do it as the vehicle was out of track.
The second and final attempt was also a failure as there was failure in rod end of front right wheel.


Then we attempted the acceleration test. We successfully completed the acceleration test.
Then the maneuverability test was also unsuccessful. Due to many turns, vehicle came off-track.

- **DAY 5- (07.01.2018) Endurance Race-**

The last day was allotted only to endurance race. No other events were conducted on this day. The teams who successfully completed technical inspection and brake test were allowed for the endurance race.
Our team successfully could withstand in the endurance race.



Conclusion

We achieved 34th position in the event out of 79 teams, where as we achieved 42nd position the previous year. We will be striving hard to gain better positions in the upcoming years.

REPORT ON VIRTUAL BAJA SAEINDIA 2018

List Of Members

s.no	Name	Roll number	Role
1	P. Vamsi Krishna	15241A03A5	Captian
2	S. Raghu Veer	15241A03B0	Vice Captian
3	A.Akshay Kumar	15241A0363	Chasis Lead
4	G.Bharath Kumar	15241A0316	Suspension Lead
5	S.Vaijayath	15241A03B3	Transmission Lead
6	M. Nihkil Chand Gupta	17241A0328	Marketing

Virtual BAJA

Virtual BAJA is a national level presentation event, in which the teams are to present their design of the vehicle to a panel of well experienced judges from eminent companies. It took place in the month of July, in Chitkarauniversity Chandigarh around 350 teams all over India registered for the event. Of which, 120 teams will be selected for the next level of the competition.

Event details

VIRTUAL BAJA SAEINDIA 2018

12^{th} to 14^{th} of July 2018.

Chitkara University, Rajput campus, Chandigarh

At The Event

A team of 6 people visited the event.

- We registered for the event on 12^{th} July.
- We presented out ppt as scheduled on 13^{th} July.

At The Presentation

Our presentation was started at 3:30PM, first 15 min we gave power point presentation which was followed by queries for 5 minutes .The main queries were about CAE, braking, DFMEA .

The presentation ended up with VIVA which has 5 questions from rule book followed with extempore on two random topics from automobile engineering and production technology. The extempore topics

S.No	Name	Id Number	Phone Number	Designation
1	S. NITHIN	14241A0343	9866753818	Captain
2	A. SRAVIKA	15241A0362	9553617914	Vice-Captain
3	K. NAVEEN CHANDRA	15241A0393	9133401969	Tail
4	G. ARUN VARMA	16245A04P9	9100334455	Tail
5	B. SARALA	17245A0323	9000506741	Wing
6	PRITHVI RAJ	16241A0350	9391021248	Wing

we got are DRUM BRAKES and SURFACE FINISHING.

Transport And Accommodation Details

- We started on 10th July, 6:50AM from Hyderabad
- We reached Chandigarh on 11th July 4:00PM
- We stayed in ODCF guest house from 11th July to 14th July
- We returned on 15th July and reached Hyderabad on 16th July 8:00PM

REPORT ON SAE AERO DESIGN CHALLENGE 2018

REGULAR CLASS TEAM NUMBER: ADC20180123

List Of Members

Sae Aero Design Challenge Event Report 2018

Event Details

Anna University, Guindy Campus, Chennai
Purpose: Sae Aero Design Challenge Final Event
Dates: 10th To 13th July, 2018.

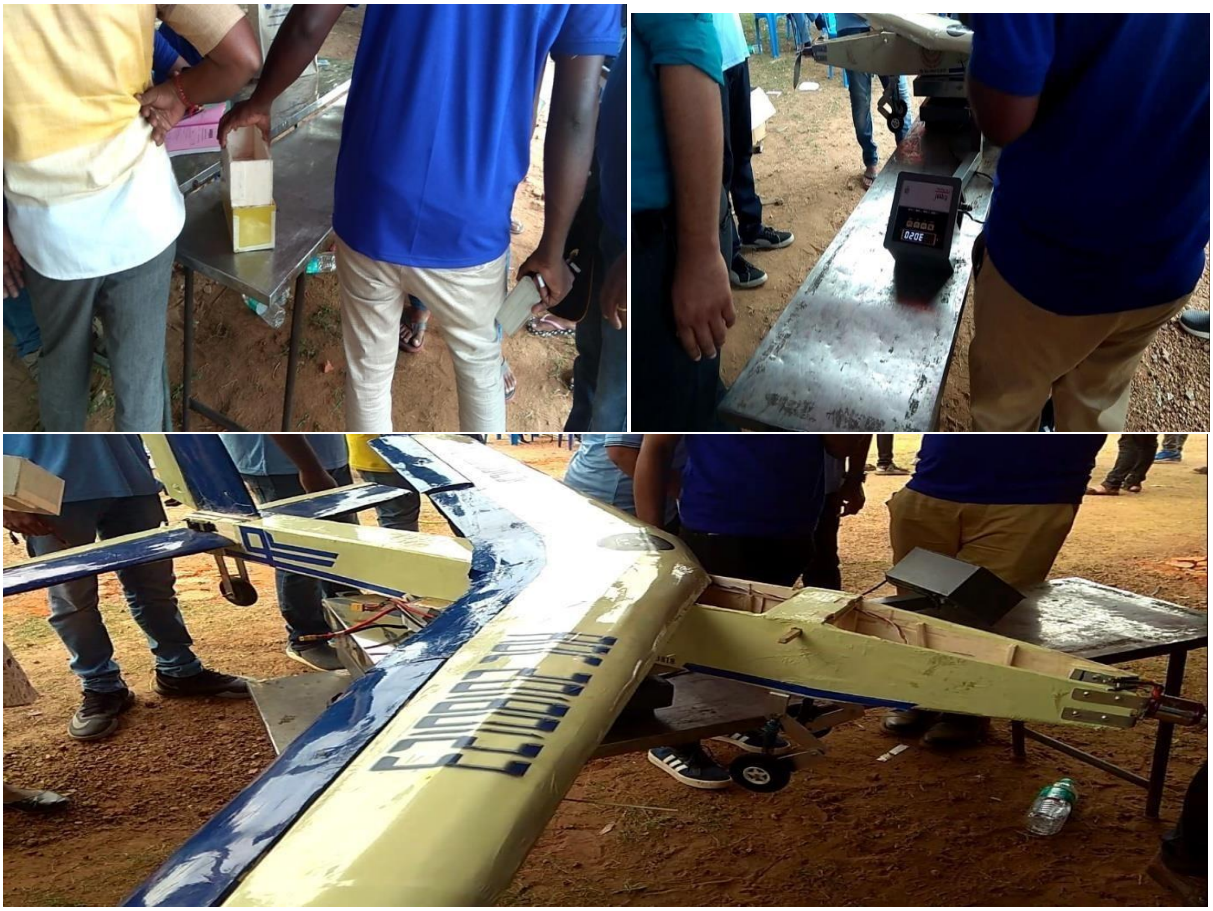
AT THE EVENT

- **DAY-1(10-07-2018)**

We have reached the given venue at around 10 a.m. in the morning. The first thing we did was to register ourselves for both event and for the accommodation for four days whole. We got the schedule of the event and different slots for Technical Presentation, Technical Inspection and for the final flight rounds. Our slots were scheduled for the next day i.e., on 11th July. We started to check the aircraft if it is damaged while transport or not and adjusting the plane assembly and getting ready for our first hurdle – Technical Inspection, while the member who were supposed to give the Technical Presentation are preparing.

- **DAY-2 (11-07-2018)**

The Technical Presentation of our slot started at around 11 a.m. and our presentation was completed 12 noon. The Technical Inspection of the aircraft of our slot was scheduled to the evening of the same day. So, we were getting ready for the Inspection as we are short on time. We reached the Inspection place by 4.30 p.m. as per the schedule. All the proceedings were completed by 5.30 p.m. We faced no problem during the Inspection as we had cleared the round in a single attempt. The final flight round of our aircraft was scheduled for the next day morning in the first slot. So, we headed to our rooms and started to check the aircraft for the last time.

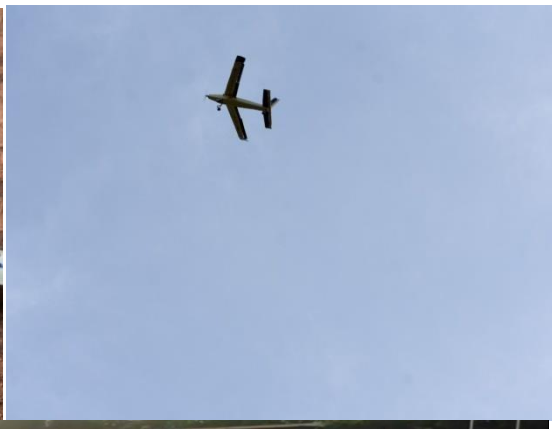


- **DAY-3 (12-07-2018)**

The regular class aircraft flying round was scheduled to the evening and our slot timing was from 3.30 p.m. to 4.30 p.m. We reached the flying area and waited for our chance. When our chance arrived, they checked the CG and made sure it was all normal. It successfully took off and there was no problem there. It reached to the greater heights than we have expected it to be, and there was no problem during the flying also. But at the end of the flying, the wing shanks in the middle region of the wing, and due to that breakage, the aircraft was crashed from a high altitude. So, our aircraft couldn't land safely. The aircraft got partially damaged and the battery was affected but the remaining components were unaffected. The overall performance of the aircraft was given as very stable flight.


- **DAY-4 (13-07-2018)**

On the final day, the morning session was allotted for the teams whose flight test was not completed, that took place till 1 p.m. Then 1 p.m.-2 p.m. lunch was provided. Then at 4 p.m., the final ceremony started. Slowly the Chief guests started giving speeches, and the awards were announced. Unfortunately, we could not win any awards. We will try better any give our best in the coming year.



REPORT ON SAE INDIA AERO DESIGN CHALLENGE 2018
MICRO CLASS TEAM NUMBER: ADC20180121

Dr. Jandhyala N. Murthy (Director), Dr. K.S.N. Raju (Sr. A.O), Dr. J. Praveen (Principal)

with Aero Design team

List Of Members

S.No	Name	Id Number	Phone Number	Designation
1	K. Sri Sai	15241A0326	9030033232	Captain
2	M. Naga Sai Durga Dinesh	15241A0330	9063974963	Vice-Captain
3	A. Hari Teja	15241A0305	9494852288	Tail
4	Y. Venkata Sai	16245A0324	9701262081	Wing
5	K. Sivani	15241A0389	9441515279	Wing
6	T. Lakshmi Deepak	16241A0397	9490904106	Tail
7	K. Neeraja	16241A0333	8639821552	Fuselage

Sae Aero Design Challenge Event Report 2018

Event Details

Anna University, Guindy Campus, Chennai
Purpose: Sae Aero Design Challenge Final Event
Dates: 10th To 13th July, 2018

At The Event

- **DAY-1 (10-07-2018)**

  We have reached the given venue at around 10 a.m. in the morning. The first thing we did was to register ourselves for both event and for the accommodation for four days whole. We got the schedule of the event and different slots for Technical Presentation, Technical Inspection and for the final flight rounds. Our slots were scheduled for the next day i.e., on 11th July. We started to check the aircraft if it is damaged while transport or not and adjusting the plane assembly and getting ready for our first hurdle – Technical Inspection, while the member who were supposed to give the Technical Presentation are preparing.

- **DAY-2 (11-07-2018)**

  The Technical Presentation of our slot started at around 11 a.m. and our presentation was completed 12 noon. The Technical Inspection of the aircraft of our slot was scheduled to the evening of the same day. So, we were getting ready for the Inspection as we are short on time. We reached the Inspection place by 4.30 p.m. as per the schedule. All the proceedings were completed by 5.30 p.m. We faced no problem during the Inspection as we had cleared the round in a single attempt. The final flight round of our aircraft was scheduled for the next day morning in the first slot. So, we headed to our rooms and started to check the aircraft for the last time.

- **DAY-3 (12-07-2018)**

As our flying round was scheduled in the morning of 12th July, we headed to the flying area. As our aircraft is of Micro category, we need to participate in a bonus round i.e., assembly of the whole aircraft round and need to be completed within 90 seconds. As our team number was announced to participate, we went to the competition area. We read the instructions very carefully and we were ready for the round. As we started, we were able to complete the whole assembly of our aircraft within 40 seconds and became 2nd team as far as we know to complete within 40 seconds. Next, we were asked to gather near the flying area. We handed our aircraft and our transmitter to the members who will fly our aircraft. They have checked all the control surfaces by using the transmitter and completed the whole checking process within 23 seconds, which is a very good time. Then, they were ready to hand launch our aircraft. In the first attempt, the launch was good, but the aircraft did not get much lift and it was crash landed in the ground, leaving the nose was broken. We took the aircraft and headed back to the pit. The fuselage was destroyed, so we replaced it with the spare fuselage which we have. It took some time for us to go for the 2nd attempt, as we changed the fuselage, electronics placement and testing of them. Finally, we went for our 2nd attempt at around 3 p.m., but the result was what we didn't expect. The same thing happened this time as the previous time. The aircraft did not fly much but landed safely this time. We went back to the pit, did some modifications and headed to the 3rd attempt. This time it did not even fly and crashed into the ground as soon as it was launched from the hand. We have got no more chances to participate, so we headed back to the pit and watched other team's aircrafts.




- **DAY-4 (13-07-2018)**

  On the final day, the morning session was allotted for the teams whose flight test was not completed, that took place till 1 p.m. Then 1 p.m.-2 p.m. lunch was provided. Then at 4 p.m., the final ceremony started. Slowly the Chief guests started giving speeches, and the awards were announced. Unfortunately, we could not win any awards. We will try better any give our best in the coming year.

Aero design team with faculty in GRIET

REPORT ON INDIAN KARTING CHAMPIONSHIP WORKSHOP 2018

List Of Members

S.No	Name	Id Number	Phone Number	Designation
1	A.O.S.S Akhil	15241A0301	9000400213	Design,Manufacturing (Head)
2	Lakshmi Deepak Tadepalli	16241A0397	9490904106	Steering (Head)
3	Samaikhya. M	16241A0342	7799373954	Design
4	Dimple Choudary	16241A0319	8374237515	Braking
5	Sai Tejaswini. T	16241A0353	8712296958	Steering

IKC GO-KART Work Shop

Event Details

Smt. KashibaiNavale College of Engineering, Pune.

Purpose: Indian Karting Championship Workshop.

Number of days: 2 days.

Dates: 9th and 10th JUNE, 2018.

AT THE EVENT

- **Day-1(09-06-2018):**

By 8:30 a.m. we reached the venue i.e., Smt. KashibaiNavale College of Engineering, Pune. The registrations started at 9.00 a.m. Payed ₹500 per head i.e., ₹2,500 in total.

The first session started at 11.30 a.m.

At the beginning, they gave the schedule of the 2 days workshop, and what they are going to teach us in these 2 days and all.

Initially they started by explaining about each and every subsystem. They gave the list of all the parts in each and every subsystem separately. Then, they started explaining the rule book from the beginning, all the rules they have given and elaborating the key points, do's and don'ts etc… Gave some tips while manufacturing, things to avoid, things to take care of.

1:00 p.m. to 2:00 p.m. – lunch break.

The second session of the day started at 2:00 p.m.

In the beginning of the second session, they showed an old GO-KART and explained in detail about all the parts and clarified some doubts.

Later the taught us how to design a chassis using the floor plan technique. They drew an actual sized chassis by sitting on a long paper and showed us how it is done.

Then, they started explaining in detail about each subsystem, starting with TRANSMISSION.

They told us about the power transmission, drew few diagrams to explain it and then they told us about the types of power transmission that can be used, differences between them, pro and cons of each of them, and which is more suitable and where. Derived some formulae and showed us. They even did some sample calculations about the sprocket ratios, rpm calculations and power calculations.
Then they started explaining about BRAKING system.
Here, they showed us how the braking system works by using a line diagram. They told about the different types of braking systems that can be used in either go-kart or in general automobiles. Derived some formulae, showed some sample calculations, told about the things where some innovation can be done, where we need to take care of and things to avoid.
The session ended at 5:30 p.m.

- **Day-2(10-06-2018):**

The first session of the second day started at 11:00 a.m.
This whole session is about CAE and its using methods only. They taught us the ways to start, proceed and end our CADD modeling. They told us about different types of modeling, analysis and simulation software, the best of them, and why. The taught us about how to do the perfect kind of analysis in ANSYS software, points to take care of and how to save time while doing analysis. Explained about the components to be analyzed, the worst-case scenario and the requirements of CAE. Told about different kinds of analysis to be done on te vehicle to get the perfect results. Showed us some of the parts that are analysed before and explained about how to read the results of the analysis. At the ending of the session, they even explained us how to make the CAE report for the virtual and for the final event.
1:00 p.m. to 2:00 p.m. – lunch break.
In the second session, the main concentration was on the steering and the calculations.
At the beginning, they started by explaining about all the terms used in the steering systems and elaborated them by using some pictures.
They told us about the different kinds of mechanisms and geometries in steering system. Explained about the effects caused in some cases, told the ideal conditions and showed the movement of the mechanisms. Drew some line diagrams and derived some formulae, told about the suitable conditions.
Later, they told that the further details regarding the virtual in the month of July will be uploaded in the INDKC website.
Then, they have distributed the certificates.
The session ended at 5:00 p.m.

REPORT ON FMAE BAJA INDIA 2018

List Of Members

S.NO	Name	Sub System
1	A.Pavankumar	Transmission
2	Suresh Krishna . E	Transmission
3	Harish challa	Roll cage & CAE
4	Harish goud .	Braking
5	VamsiKrishna . P	Braking
6	Raghu veer.S	Marketing
7	Bharathkumar .G	Steering & suspension
8	Akshaykumar .A	Roll cage & CAE
9	Vaijayanth .S	Transmission
10	Nafiuddin .SK	Transmission
12	Shivani .K	Braking
13	Shruthi .K	Marketing
14	Mustabeen khan	Roll cage & CAE
15	Harshitsingh	Roll cage & CAE
16	Sai Krishna .T	Roll cage & CAE
17	Swetha .M	Steering & suspension
18	Geethanjali .V	Steering & suspension
19	Saiganesh	Steering & suspension
20	Ritheshkumar	Steering & suspension
21	Anirudh .T	Steering & suspension
22	Niranjan	Steering & suspension
23	Nutankumar .U	Braking
24	k. Saikiranchowdary	Braking
25	Someshwarrao	Transmission
26	Mohd. Wasim	Transmission
27	Deepika .B	Transmission
28	Rohitdatta .Y	Transmission
29	Nikhil chandgupta	Marketing

FMAE BAJA INDIA

FMAE BAJA (**An initiation by Fraternity of Mechanical and Automotive Engineers.)** began with the vision of setting a new benchmark for student design competitions held in India. GokarajuRangaraju Institute of Engineering and Technology has competed in this competition in the past under the name "Bruiser Heads". The main aim of this event is to design, manufacture and make an All-Terrain Vehicle (ATV) move within the restrictions set by FMAE BAJA. Team Bruiser Heads works hard to build the best performing, economic vehicle and to be the number one team

EVENT DETAILS

The event took place from 1st August to 5thAugust 2018 at Divya Retreat Keesara, Hyderabad. The event was divided into two parts, i.e., static event and dynamic event. The following report is a complete description of the event, in a day-to-day manner.

AT THE EVENT

- **DAY 0- (01.08.2018) TEAM REGISTRATIONS-**
  The first day, "day zero", there were registrations. We got our pit and arranged our vehicle and tools in the allotted pit.

- **DAY 1- (02.08.2018) TECHNICAL INSPECTION-**

  The second day, there were static events. As per the schedule, our team had "sales presentation" in which we present our vehicle as a product for the investors and they help us set up a plant. After the sales presentation, there was "technical inspection" in which they check our vehicle and confirm that we have made it according to the rules of FMAE BAJA.

- **DAY 2- (03.08.2018) STATIC EVENTS-**

  Static events like cost and design presentation continued. First there was cost presentation in which we explain how we spent money to produce the vehicle, fabrication and manufacturing. Then there was design presentation in which we explain our complete design of each subsystem and part to the panel. Along with the presentations, we had maneuverability testing.

- **DAY 3- (04.08.2018) DYNAMIC EVENTS-**

  There were dynamic events such as hill climb, suspension track and rock climb. We cleared the hill climb in about seconds and geared up for the suspension testing. There was a direct impact of a rock on the knuckle and there was a knuckle breakdown. Due to this we couldn't complete

the lap of suspension and couldn't attend the rock climb event. We repaired the knuckle and got ready for the endurance test the next day

- **DAY 4- (05.08.2018) ENDURANCE EVENT-**

The last day of the event, we had endurance test of 3 phases in it. The first phase had maneuverability track of 1.8kms in which we completed 17 laps in 1.5 hrs. The second phase had maneuverability and suspension track together of 2 kms. In the trail lap, our axle had a breakdown. We fixed it in 10 minutes and completed another 17 laps n 1.5 hrs.

The third phase had maneuverability, suspension, hill climb and rock climb tracks together of 2.5 kms which was for 30 minutes. We had an engine breakdown in the second lap but we finally completed the lap.

Conclusion

We achieved 2nd (runner up) position in the event out of 48 teams. We will be striving hard to gain better positions in the upcoming years.

Then there was prize distribution.

We received following awards:

- First place in cost presentation
- Fastest TI

- Second place in design
- Second place in endurance and fuel economy
- Overall runner up.

In the middle Mr. K. Sunil Kumar Reddy(Faculty Adviser), Dr. J.N. Murthy (Director), Dr. L. Jayahari(HOD), Mr.L. Gopinath, Mr.P.Gopala Krishna(Dean Publicity) with FMAE BAJA team

Won overall All India 2nd Prize(1lakh Cash Prize), 1st in Technical Inspection, 2nd in Endurance, 1st in Cost Report and 2nd in Design Report in FMAE BAJA which was held at Hyderabad

REPORT ON MECHANO 2K18

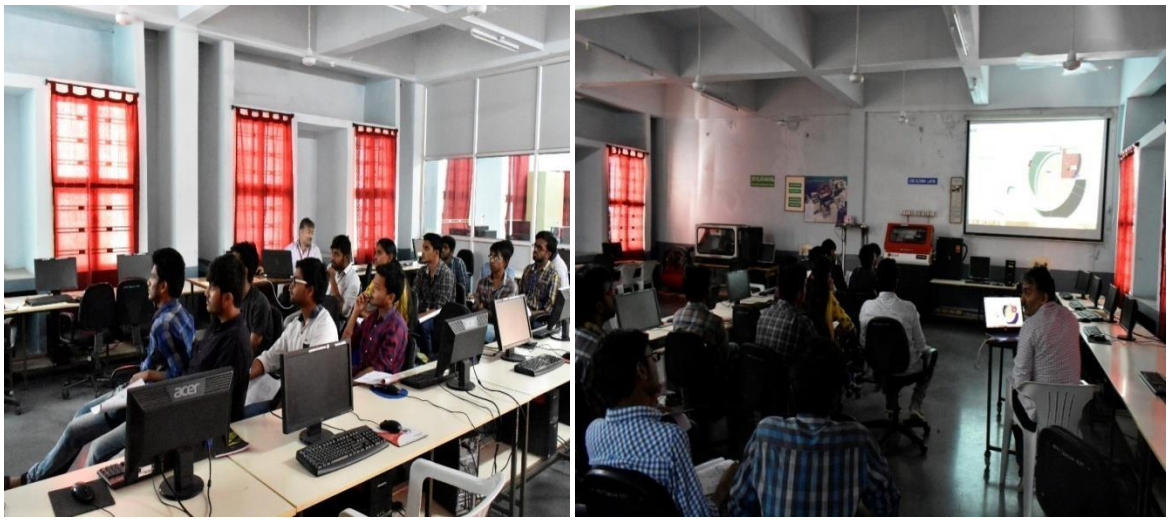
MECHANO 2K18 EVENT REPORT

EVENT DETAILS

23rd and 24th of February 2018

- **Day-1**

  At the start of the event, there was an opening ceremony where our Principal Dr.J.Praveen, HOD-MechDr.L.Jayahari and our SAE coordinatorhave influenced the young enthusiasts. Then there was devotional song and lighting a lamp. It is been segregated a day in 2 half sessions i.e. from 9.30am-12.00pm & 1.00pm to 4.00pm. In the morning session we have planned to have a guest lecture on Missile Technology by Dr.MasoorAhmeda DRDO Scientist. In the second session there will be a workshop on Creo software by Mr.B.Krishnamohan Assistant Professor, Mechanical Department GRIET. Parallely it was conducted paper presentation and poster presentation along with non-technical events.



Mr.B. Krishna Mohan Creo resource person with students

- **Day-2**

  On the second day, workshop on Creosoftwareis continued for the Whole day along with the presentations and non-technical events. The main concept of mechano-2k18 is hands of experience for the students on the software. The feedback given by the students was pretty encouraging.

SAE faculty adviser Mr. K. Sunil Kumar Reddy with MECHANO18 organizing team

REPORT ON MECHATRON 2018

MECHATRON Event 2018

- **Day 1 of our event**

  At the start of the event, there was an opening ceremony where our SAE coordinator Sunil Kumar Reddy Sir has influenced the young automobile enthusiasts. Then there was devotional song and lighting a lamp. Total number of students participated in our event is 61. We have got 2 Pulsar bikes and 4 technicians, 2 technicians for each bike and 30 per team. The students have got opportunity to dissemble all the components of the bikes apart from transmission and engine. The main concept of this event is to have hands on experience to all the students involved. So, all the components dissembled from the bike are from students themselves.


- **Day 2 of our event**

  Previously, we have done the dissemble of the all components apart from transmission and engine. Today we have 1 existing Pulsar and 1 TVS Apache. We have an extra Apache engine for dissemble purpose. So, the entire day was just about the transmission and engine. The main concept of MECHATRON is hands on experience for the students. First years of Mechanical Engineering have shown a lot of enthusiasm for this event. The feedback given by the students was pretty positive.




GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

MECHANICAL ENGINEERING DEPARTMENT

2017

CORE COMMITTEE MEMBERS OF 2017-18

1. Faculty Advisor : Mr K Sunil Kumar Reddy
2. Faculty Advisor : Mr D S Nagaraju
3. Student Chairperson : Anil Shivanathri
4. Student Vice-Chairperson : Sher Nithin
5. Student General Secretary : Gouthami Vuppala
6. Student Deputy General Secretary :Harika Ayyagari
7. Student Treasury :V Spoorthi
8. Student Manufacturing :Emmadi Suresh Babu
9. Student Documentation : B Snehalatha
10. Student Deputy Documentation And Membership Chair: Mikkilineni Naga Durga Dinesh

REPORT ON SAE AERODESIGN CHALLENGE 2017

REGULAR
TEAMBRUSIERHEADS
TEAMID: ADC20170122

MICRO
TEAM SKYRIDERS
TEAMID: ADC20170121

List Of Members

Team Bruiser Heads

S.No	Team Member
1	Sneha Sriram
2	Subash Reddy Kolan
3	B.Hari Krishna
4	C.Srikanth
5	R,Anjali
6	K.Sri Sai

Team Sky Rider

S.No	Team Member
1	V.Manil Reddy
2	M.Raghavendra
3	Sher Nithin
4	M.Naga Sai Durga Dinesh
5	A.Sravika
6	A.Srujana
7	S.Raghu Veer

Abstract
The main objective of this competition is to design analysis and fabricate the radio controlled aircraft. That is capable of lifting as much as payload with as much as less self-weight. i.e. self-weight of aircraft which should not weigh more than 1.5 Kg. A special attention has been devoted to select the aerofoil, the wing plan form and overall weight of a aircraft. In order to have less weight with a moderate strength to the aircraft balsa wood was chosen of different thickness in different positions of the flight according to the strengths required. We have used solid works software to model the aircraft. Analysis and Xflr5 software were used to do structural analysis and to estimate the max coefficient of lift (C_l), min coefficient of drag (cd) and angle of attack (α). This report is synopsis of the design process, analysis, manufacturing, testing of aircraft.

Introduction
Society of Automotive Engineers Indian Southern Section (SAEISS) hosts Aero Design Challenge, where engineering students are faced with the opportunity to take part in a real life challenge by designing an RC Aircraft based on requirements. During the design process there are many problems that arise with design process, time management, budget, and team dynamics all create unforeseen obstacles. In order to be successful in this competition, the design must be adapted and enhanced along the way. Based on the rules of the competition, each team is required to design a cargo airplane that will be able to complete a predetermined circuit carrying the predicted maximum payload while taking off and successfully landing within the specified parameters.

SAEISS Aero design features two classes of competition–

1. Regular Class
2. Micro Class

The competition is divided into 3 phases as follows:

- **Phase 1:** Technical report: Proposal describing the team's requirement compliance.
- **Phase 2:** Technical Presentation and Inspection.

  Phase 2A – Payload Loading Demonstration (timed event during Oral Presentation).
  Phase 2B – Payload Unloading Demonstration (timed event during Oral Presentation).
  Phase 2C – Oral Presentation.
- **Phase 3:** Flight Competition.

Rules:-

Regular Class	Micro Class
(L+W+H) <170 inches	MCA container shall be less than 3 feet cubic box.
2 kgs< Aircraft Weight < 5kgs	MCA weight < 1.5kgs.
Designs are limited to fixed wing aircraft	Designs are limited to fixed wing aircraft
Landing gear	Hand Launch
Electric Motor propulsion should be used	Electric Motor propulsion should be used
Single motor configuration is allowed.	Multiple motor configurations are allowed.
Single propeller is allowed.	Multiple propeller can be used
Prop savers and metal propellers are prohibited.	Propeller shrouds, ducted fans are allowed. Metal propellers are prohibited.
Spinner or Rounded safety nut must be used.	Spinner or a Rounded safety nut must be used
Gyroscopic assistance is not allowed.	Gyroscopic assist and other forms of stability Augmentation is allowed.
The use of fiber reinforced plastic, lead is prohibited	The use of fiber reinforced plastic, lead is prohibited
4 cell-6 cell Li- Po battery pack	3 cell-Li-Po battery pack
2.4 GHz radio is to be used	2.4 GHz radio is to be used
A closed payload bay of 10x4x4 inches	Payload bay dimension are 5x1.5x1.5inches.

Over All Specifications

Particulars	Dimensions of Regular Class	Dimensions of Regular Class
Aerofoil	Seiling123	Eppler423
Wingspan	58inches	33inches
Plan form	Elliptical	Tapered wing
Mean aerodynamic chord	11inches	4.1732inches
Root chord	12inches	4.5669inches
Tip chord	10inches	3.7795inches
Wing area	638 sq.inch	159.65 sq.inch
Aspect ratio	5.27	6.79
Wing loading	21.76 0z/ft^2	16.29 0z/ft^2
Winglet inclination	30^0	Not Used

Event

ADC 2017 was a 3 days event which was held at Anna University, Chennai on 8,9 and 10 June 2017.

On the day one, it was a technical presentation where we have to give description and analysis of its design, aerodynamic structures and its aerodynamic properties. Besides, to this presentation there was a question hour. The Judges enquiries our aircraft design, manufacturing, properties and point out any flaws in our model.

Main event, flying was organized on the day two. Before flying, every team must undergo technical inspection. It consists inspection of overall dimensions i.e., (L+B+H<170 inches) for regular class, micro class aircraft must fit in a 3 cubic. Feet container. Inspection of material used where we can use many materials like MDF, Depron, Balsa Wood etc., and we are prohibited to use materials whose weight is less than air. Weight of the aircraft is another aspect where regular flight must weigh 2-5 kg,micro Class less than 1.5kg. If any team violates these rules, they may be expelled out of the competition. Apart from these rules, there was another category for micro class called "ASSEMBLY OF AIRCRAFT". The team will be awarded bonus points if they assemble the flight within 90 seconds. After this whole inspection, the team is allowed to fly.

On day three was award presentation. Top 3 overall performance awards were given both for regular and micro classes. Apart from them there are other awards like best design report, best technical presentation and best innovation.

Achivements

MICRO CLASS

1. Over all 3rdprize
2. 2ndBest technical presentation

REGULARCLASS: Over all 7thposition.

REPORT ON MECHANO 2K17

Mechano2k17

Conducted by: SAE GRIET (TEAM BRUISER HEADS)

Event dates: 31 JAN, 1 FEB 2017

Venue –GRIET date – 31/1/2017, 1/2/2017

Mechano 2k17 was conducted by GRIET MECHANICAL ENGINEERING SAE COLLEGIAETE CLUB. Under this a workshop related to ALL TERRAIN VEHICLE, RC AEROPLANE and HYBRID CYCLE was conducted. All these projects were made by students of SAE GRIET over past two years. All three projects were explained in detail from design phase to fabrication phase. A detailed explanation was given in two days about all the projects and sharing the experience with the teams that had represented these projects in national level competitions.

There was PPT presentation session, where students gave their presentations about various topics.

Non-technical events such as MOVIE MANIA, MINI MILITIA and LOGICAL QUIZ competitions were also held.

The students were pretty much excited to be a part of thefest. At the end of the workshop quiz competition was held and 10 merit students were shortlisted.

COST REPORT

TOTAL AMOUNT GENERATED WITH REGISTRATIONS IS 57800/-

EXPENDITURE (T SHIRTS -6400/-

Digital printout- 2860/-

Flexi printing -2450/-

Winning amount 1500/- etc.)

- 14690/-

Net amount 43110/-

Mr.D S Nagaraju, Dr. L Jayahari(HOD), faculty members with students in MECHANO17

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 od 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.

GOKARAJU RANGARAJU INSTITUTE OF ENGINEERING AND TECHNOLOGY

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 53student 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

12)Vamsi

13)Nikesh

14)G.Manikanta

15) Sridhar

16)Dinesh

17)Rajshekar

18)Subash

19)Manil

20)Nithin

21)Raghu

22)Manikanta Somasunder

23)Rakesh

24)Tharun Kumar

25)Hari 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.