

# SOCIETY OF AUTOMOTIVE ENGINEERS (SAE)



# Reports

## SAE

Society of Automotive Engineers (SAE) organizes workshops, industrial visits, guest lectures and various competitions. A team of 13 Office Bearers under the guidance of Faculty Advisor Prof S. P. Komble work hard in organizing these events.

The following activities were organized by SAE Core Committee:

### 1. Industry Institute Interaction:

Kone Cranes Private Limited visited VIT on 24th August 2013. The company offered design projects based on reverse engineering to the students. The lecture was appreciated by everyone as practical knowledge was obtained via the resource persons. After a specified procedure which was accompanied by interviews five candidates of third year were selected for the design projects.



### 2. CATIA Workshop:

Basic CATIA V5 Workshop was scheduled from 13th to 15th September 2013. CATIA is a 3d modeling software used for designing. The workshop was conducted by Team Hawk 4.0(BAJA Team), The workshop covered 3 Workbenches viz Sketcher, Part Design and Assembly. The generated revenue was given to Team Hawk 4.0 as a contribution from SAE Core Committee in the presence of Prof S.P.Komble and Team Captain as per contract.

### 3. SAE Day:

This year SAE Day was hosted by VIT. It was celebrated on 28th September 2013. There were two events scheduled: Project Competition and Annual Social Gathering.

The Project Competition was in VIT itself around 19 different college teams had participated. Judges were from Emerson and other Companies. The event was a grand success.

Annual Social Gathering was held at ARAI, Kothrud Pune. The Annual Social Gathering witnessed the presence of many Faculty Advisors, HODs from the entire Western Section as well as people from Multinational Companies. There were a variety of performances lined up, starting from Ganesh Vandana to Hip Hop with shadowgraphy, Sand Art and Band leaving the crowd speechless, because of good management skills. VIT got the opportunity to host SAE Day again next year. The entire revenue for the event was given by ARAI.

### 4. JCB Industrial Visit:

JCB Industrial Visit was scheduled on 29th September 2013. We visited Talegoan Plant of JCB , all the earth moving equipments were observed, their manufacturing, the machines involved in it, the imports and Exports of JCB all over the world, The company's entire structure was studied carefully by students. A total of 65 students including two professors visited the company.

### 5. ARAI Industrial Visit:

ARAI Industrial Visit was scheduled on 5th October 2013. A total of 32 students including two professors visited ARAI Kothrud. The students were exposed to the research of Automobiles, the virtual, practical as well as the possible future changes in automobile Industry was a worthwhile lesson which no one will ever forget. All the available machinery, all processes as well as the feasibility of particular components were learnt.





#### 6. Guest lecture on Fluid Machinery:

A guest lecture by Mr. Vinay Kulkarni Chief Engineer at Vidarbha Irrigation design Circle was scheduled on 12th October 2013. He shared his valuable knowledge regarding the turbines. As third year Mechanical students have Fluid Machinery and Fluid Power as a subject in curriculum therefore all the students had many doubts regarding turbines, all the doubts as well as the many new things were learnt from the lecture. A visit pertaining to the same i.e to NIRA BHATGAR plant which has Kaplan Turbine was planned.

#### 7. MATLAB Workshop:

Basic MATLAB Workshop was organized on 18th and 19th OCTOBER 2013. The workshop was conducted by SAE Collegiate Club in collaboration with IEEE Team. The workshop covered mainly basic operations of matrix, Creating a vector and plotting styles. Prof Dr. S. P. Chippa was the Invigilating faculty of the Workshop. The event witnessed the presence of 40 students. A total team of 8 from IEEE was present for conducting the workshop.

#### 8. Forbes Marshall Award Function:

Forbes Marshal award is given to best BE Project of the pass out batch. The award function was scheduled on 17th of January 2014 from (4:00-7:00) pm. All the students of SE, TE, BE and ME of Mechanical Branch were present for the event. All the students who had some achievements in some or the other fields were also felicitated.



#### 9. Industrial Visit to John Deere:

Industrial Visit to JOHN DEERE INDIA PRIVATE LIMITED was scheduled on 28th January 2014. A total of 50 students were present for the visit. All the machinery was observed including engine factory, transmission factory, vehicle assembly, paint shop, etc. We learnt a lot about machinery and its working. The difference between theoretical and practical knowledge was easily observed. Students were really were happy as they learnt many new things as well as they were updated to the recent trends in industries.

#### 10. Industrial Visit to Tata Motors:

Industrial Visit to TATA Motors was scheduled on 9th February 2014. A total of 50 students were present for the visit Students could see Production shop, Gear Factory, Cylinder block line (Engine Assembly). In the door press shop we got a chance to see "Hitachi press line" which is a completely automatic production line of doors. We then visited some of the production and assembly line of Indica vista, Safari, Xenon etc. we also visited the test track for vehicles.

#### 11. Industrial Visit to Thermax Pvt. Ltd.:

Industrial Visit to Thermax was scheduled on 15th of March 2014. A total of 50 students were present for the visit including Mr. Dhaneshwar and Mr. Mali. Thermax plant is situated in Chinchwad which is around 30 kms away from VIT College. We learnt about the manufacturing of boiler, All the mechanical working of metals like Rolling, Forging was also shown Different types of Boilers were also shown but having got the opportunity to witness the nuclear radiation room which is used to test the cracks in boiler was a great bonus. We also learnt a lot about machinery and its working

#### 12. Industrial Visit to Volkswagen:

Industrial Visit to Volkswagen was scheduled on 27th March 2014 Volkswagen is a famous multinational automobile company. Volkswagen is a part of Volkswagen group which has total chain of nine different automobile companies like Scania, Porsche, Skoda etc. Volkswagen POLO, VENTO and SKODA FABHIA are assembled in CHAKAN. The entire assembly line was observed and studied carefully, the logistics department as well as the Motorsports department too was studied.



### 13. Introductory meet of all teams:

An Introductory Meet of SAE Collegiate Club, BAJA, SUPRA, GO-KART, EFFI-CYCLE and AEROMODELLING CLUB of our college was scheduled on 9th of April 2014. The main aim of the meet was the acquaintance of students to the various technical and extra-curricular teams of our college. More than 100 students were present for the meet. Each and every team explained in detailed about their work schedule etc. Students came to know about these teams and what is necessary to be a part of it.

## SAE BAJA 2014

### Background:

The BAJA SAE Series is an event for the undergraduate engineering students, organized globally by the Society of Automotive Engineers, USA. The event has spanned across six countries – USA, Mexico, South Africa, Korea, Brazil and India. The BAJA SAE tasks the students to design, fabricate and validate a single seater four - wheeled off road vehicle to take part in series of events spread over a course of 3 days that test the vehicle for the sound engineering practices that have gone into it, the agility of the vehicle in terms of gradability, speed, acceleration and manoeuvrability characteristics and finally its ability to endure that back breaking durability test.

### Introduction to BAJA SAE INDIA:

The evaluation process for the BAJA SAE INDIA is a two-fold process and students have to clear the Virtual Baja preliminary round before they start manufacturing their buggies for the main events. The teams are judged on six main parameters in the Virtual BAJA event which are – their knowledge of the rule book, the design of the vehicle, the project plan, the design methodology and the design evaluation plan. A total of 400 points are available for each team's design and the top 120 teams were selected this year to complete in the main event.

The evaluation process in the main event is a different ball game altogether and the students finally got to showcase their finished buggies to the judges. In the static tests the buggies are evaluated on various factors such as cost, aesthetics and the quality of the

fabrication. There are also many dynamic tests such as acceleration, braking, manoeuvrability over all terrain and a hill climb test. But none of these tests are more gruelling than the endurance race where the drivers and buggies are pushed to their limits till a winner emerges.



### The Journey Begins....

After the success of Team HAWK 3.0 in BAJA SAE INDIA 2013, Team selection processes were conducted with Prasanna Chavan leading the HAWK 4.0 as captain of the team and Amey Tambe as vice-captain and technical head. Based on different selection criteria like task completion, performance in interview by senior members of team and faculty interview, a team comprising of 25 members in core team and 10 members in ground team was formed till the end of the month of April 2013. The members in the team were organized into different subsystems viz. Rollcage, Steering, Suspension, Drivetrain, Brakes and CAE with every subsystem being led by senior member having experience of BAJA 2013.

### Phase one: Design

Officially the design work of team started after the final examinations in the month of May 2013. Basic training of design software like CATIA, ANSYS were given to new members and each of the members was allotted with different design tasks and a deadline to follow for effective working. For design we did numerous calculations, detail dynamic study, finite element analysis, CAD modelling, market study, optimization techniques were incorporated and various other things. Various workshops for analysis software



## **Congratulations - SAE-NIS EFFICYCLE 2014**



Team “APACHE” under SAE chapter of VIT for participating and securing overall 19th Rank out of 90 teams all over India and First in Maharashtra at SAE-NIS EFFICYCLE 2014. This competition was organized by SAE North India Section at UIET, Chandigarh from 9th to 12th Oct 2014.



## National Gokart Championship 2014



Team “TAURUS” under SAE chapter of VIT for winning “WINNERS-ENDURANCE and FUEL ECONOMY “ and “BEST BUSINESS PLAN” award in First Position at National Gokart Championship 2014 held at Kari Motor Speedway at Coimbatore organized by Indian Society of New Era Engineers from 17th to 19st October 2014.The award include Rs.25000/-and Trophies. Team TAURUS secured an overall 7th Rank out...