



GUJARAT
TECHNOLOGICAL
UNIVERSITY



TECHNICAL REPORT 2016-2017

**THE JOURNEY OF HARDWORK,
DEDICATION AND THE
BEGINNING OF A LEGACY...**



FORMULA BHARAT 2017

Against all Odds !

Against all odds I will survive
despite whatever you're thinking
For I've been through this before
even at times when I've been sinking

Because I've learned many lessons
Earned the hard way and thus I'll say
Before my peers I'm standing tall
because I'm more than ready to play

Against all odds and look at me now
I've been beaten yet finds that hope
A hope that when my days are done
I've found many ways learning to cope

So who's going to speak up right now
telling me that I can't do this or that?
As a testament of perseverance here
let me tell you friend...just where it's at

We are all tested daily and it sure hurts
Nevertheless we must drop our facades
Everyone is capable of being something
Achieving victory when you survive against all odds !

-- Anonymous

To the future Teams & everyone associated with GTM-17

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Thank you.



Image 01: Team GT Motorsports with GTM17

Formula Student (FS)/FSAE

What is FSAE?

Formula SAE® is a student design competition organized by SAE International (formerly Society of Automotive Engineers). The first competition was started back in 1979 after Mark Marshek, then at University of Houston (Texas) contacted the SAE Educational Relations Department in 1978 to discuss adding a variant event of the Mini Baja; the name Mini Indy was founded. As many organizers have found, the work in building a car can be exceeded only by that to organize the event; 1980 failed to produce an organizer. Having seen the potential of the event, Mike Best, Robert Edwards and John Tellkamp, students at the University of Texas at Austin, approached Dr. Ron Matthews with an idea - how about another Mini-Indy, but with some changes? Make the rules more open; let it be as unlimited as possible. It was desired that this new competition would take the cars to the next level of engineering. The Baja competition was great for chassis design, but many students wanted to work on engines as well. The new rules would keep engine restrictions to a bare minimum. Any four-stroke engine was allowed for the first four years with power limited by a 25.4 mm intake restriction.

With grass roots support from his students, Dr. Ron Matthews contacted the SAE Educational Relations Department and set the wheels in motion. To differentiate this new event from the Mini-Indy, a new name was sought. To reflect better the road-racing nature of the event and its increased engineering content, the Formula SAE name was adopted.

The concept behind Formula SAE is that a fictional manufacturing company has contracted a design team to develop a small Formula-style race car. The prototype race car is to be evaluated for its potential as a production item. The target marketing group for the race car is the non-professional weekend autocross racer. Each student team designs, builds and tests a prototype based on a series of rules whose purpose is both to ensure onsite event operations and promote clever problem solving.

Formula SAE promotes careers and excellence in engineering as it encompasses all aspects of the automotive industry including research, design, manufacturing, testing, developing, marketing, management and finances. Formula SAE takes students out of the classroom and allows them to apply textbook theories to real work experiences.

As a student, taking part in Formula Student gives them the chance to demonstrate their technical, engineering design, and manufacturing skills. They will also learn important lessons on team working, time management, project management, budgeting and presentation: all things that any prospective employer will be looking for. Formula Student graduates also find that the professionalism they gain as practising engineers means they are well equipped for their future engineering careers.

The team is tasked to produce a prototype for a single-seat race car for autocross or sprint racing, and present it to a hypothetical manufacturing firm. The car must be low in cost, easy to maintain, and reliable, with high performance in terms of its acceleration, braking, and handling qualities. During the competition, the team must demonstrate the logic behind their proposal and must be able to demonstrate that it can support a viable business model for both parties.

Today, the competition has expanded and includes a number of spin off events. In the United States, there are two locations: California and Michigan; Michigan being the largest event and longest running.

India and Formula Student:

FSAE/FS started in 1981 in United States of America under the Society of Automobile Engineers. It took 30 years for a team from India to get to that platform and showcase Indian Engineering at such an event. FSAE/FS is all about learning and experiencing what it will be like to work in real world scenario, thus the most important lesson is to learn from yours/others previous mistakes and ensure you do not repeat them. Some of the first teams to be formed in India were:

1. Defianz Racing, Delhi College of Engineering - 2002
2. Ashwa Racing, RCVE, Bangalore - 2005
3. Orion Racing, K. J. Somaiya, Mumbai - 2007
4. Formula Manipal, Manipal University - 2008

By this time there were a few participation from India in various parts of the globe. Till then there was no good show by any Indian team at such a major event. Reasons were still unknown but a lot of teams were to follow the path shown by these few teams. Orion Racing India and Ashwa Racing were making better progress than other teams, but their progress want upto the mark to deliver a car which could compete against the Universities from Germany or USA.

With Consecutive failure of Indian Teams an International Judge, Pat Clarke once posted over FSAE forums; "In a discussion with Steve Fox on how our 1st car will be if we were Indian team, we concluded that we would build a car that would pass all the requirements, would finish all events and would not finish last for just 2000\$. It would not be pretty and it would not have any unoptanium or unavailibilium on it. It would roll on street wheels and Tires but it would ROLL!!!!".

This was the start of a new Era with students now having an inspiration and a goal for how the 1st car should actually be. On the other end an affiliate body to SAE International, namely SAEINDIA after the successful start of SAE India BAJA, started their discussion on having an Indian Version of the International FSAE Competition under the Name 'SUPRA (Super Racing) SAE INDIA'. After a couple of meetings and discussions on frame work, safety and flow of the event, hard work of Prof. Sudhir Gupte & SAE India President Mr. M. S. Kumar first ever Indian Formula Collegiate Series Competition took shape. The 1st Virtual SUPRA was organized in 2009, where 28 teams participated final race event was held at Madras Motorsports Race Track, Chennai in 2011. The event was not totally compliant to the International Rules but served as a good platform for young teams to get in. Supra SAEINDIA was highly criticized for being unsafe and uneducated because of its framework and not meeting up the standards of other FSAE/FS events internationally. Here was where Indian 'Jugaad Engineering' was challenged to be converted into 'pure engineering'. Some took the ownership to perform better and started working on the same but on the other end No. of teams rose up exponentially and the same issues continued. No successful car yet.

After nearly 10 years, in 2011, the team IIT Roorkee Motorsports developed a car and represented India in FSAE Australasia 2011 competition held in Melbourne, Australia and became the first ever car from India to complete the 22 km endurance race, The team also stood 1st in Efficiency.

Over the years there were some good engineered cars going to international events like UK, Germany & Italy. Teams like Orion Racing, Pravega racing, Formula Manipal, Raftar Formula racing, etc raised the Indian flag internationally. Pravega Racing, Vellore was the first team to grab awards at an international event. 3rd in Manufacturing and Cost Event, FS Italy-2012, 2nd in Manufacturing and Cost Event, FS Italy-2013. This was just the beginning, students of India hope to see a podium finish by an Indian team soon in the near future.

Today in 2017, the 1st season of FORMULA BHARAT with 73 teams from across India is going to take place. Seeing the concern issues with Supra SAEINDIA the international competition (FSAE/FS) was also introduced to India under the name Formula Bharat (FB). The event followed the strict norms of international rulebook and proved to be a good learning experience to teams which could not travel to these foreign destinations. After US, India is the second country to have two such events happening in a year.

The Team:

GT Motorsports - Formula Student Team GTU is a state level collaboration between 13 colleges spread across Gujarat state. These colleges share physical and intellectual resources by using advanced communication-technology to create a highly competitive vehicle. The supply chain management is unique in Formula Student and very important at that point.

Team Structure:

Because the GT Motorsports Team is a co-operation of many colleges it needs an efficient organization structure behind it. Rather than act as competitors at the events, resources are pooled and the skills of the colleges combined. Design, production and testing will take place at various campuses. GT Motorsports is divided into teams including: Management, Powertrain, Body, Aerodynamic and Suspension. These Teams are split again in different sub-teams. These sub teams are visualized in the graph.

For this type of collaboration, it is imperative that each sub team involve students from varied interests and use all the human resources available to meet design and manufacture deadlines. Image 02 shows how the Team Structure was formed.

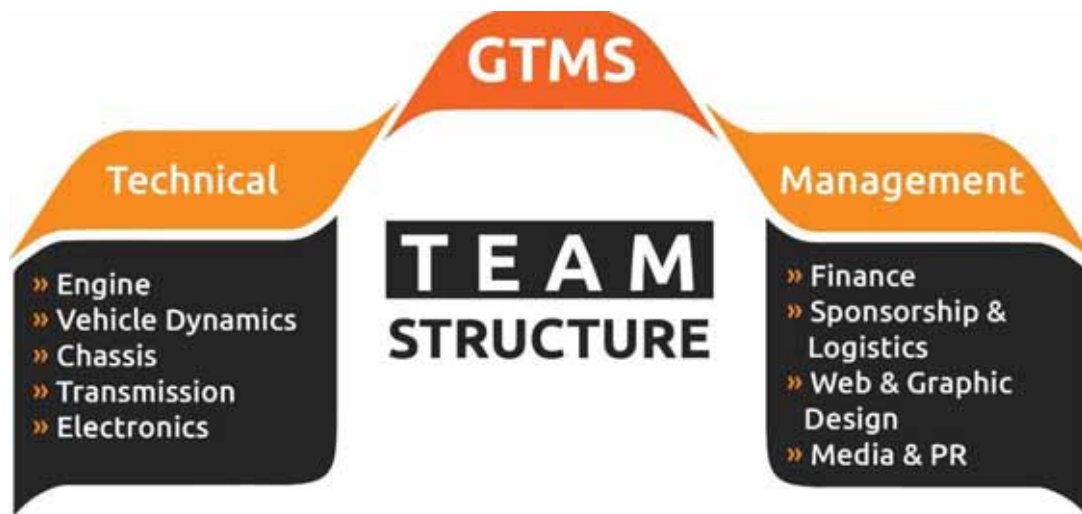


Image 02: Team Structure

Team List:



Unmit Parmar
Team Captain



Manan Bhavsar
Chassis & Aero



Kishan Thakkar
Suspension & Graphics



Deepan Pate
Powertrain



Kashyap Ganesh
CAM



Edwin Jiji
Treasurer



Darshan Chavda
Steering



Hardik Thummar
CAD



Dhruv Suthar
CAM



Mudit Pandey
Business Plan



Luvneesh Dubey
Drivetrain



Kaushal Patel
Engine Cooling



Rahil Patel
Electricals



Sunil Kumar
Electricals



Krupesh Prajapati
Brakes



Parth Kansara
Marketing & PR



Ankit Solanki
Procurement



Pulkit Patel
Supply Chain Management



Khushal Panchal
Manual Machining

Main Event: Formula Bharat 2017

Kari Motor Speedway, Coimbatore, Tamil Nadu:

Date: 25th January, 2017 (Day-0)

The team members reached the event site as per the schedule that they received, to register themselves. Whilst the registration process began the team members started working on getting the car ready to take it to the allotted pit. Soon the registration process began and the team captain and one of the team member registered the team and collected the Kit (event schedule, event handbook, wristbands, driver bands and I-cards) provided by the event organizers. 23 team members of GT Motorsports registered at the event site. After the registration was done the team was allotted a pit (according to the team categorization), wherein the team was supposed to setup their car and the required tools. Everyone onsite was busy helping their respective teams to set up their car and the pit as well as taking a tour of the track. 58 teams registered for Formula Bharat 2017 by clearing the Rulebook Quiz and 52 teams registered onsite with their car.



Image 03: Kari Motor Speedway Main Track



Image 04: GTM17 being taken to the pit

Once the pit was setup with the car and the tools inside the pit, the team started working on the car as they had to face Pre-Tech on Day 0 itself. Post lunch the Pre-Tech judge arrived at our pit for the inspection of the car as the Pre-Tech was to take place at the teams' respective pits. The judge inspected the car and suggested few minor changes in the car and some useful tips before the car goes for Technical Inspection on the next day. Seeing the work done on the car and the neatness of the car, the Pre-Tech judge promoted the team from C team to B team. The day ended on a good note with the team clearing the Pre-Tech and getting categorized as B team.

As Kari Motor Speedway lies in the outskirts of Coimbatore, far away from a residential area, the team members had given the responsibility of taking care of their accommodation, travel and food to My Pit Crew. My Pit Crew arranged rooms for all the 23 members in a hotel in Coimbatore city and provided the team with a private bus for their transportation from hotel to track and track to hotel.

Date: 26th January, 2017 (Day-1)

Day 1 started off with all the remaining A & B category teams completing their registrations and with the technical inspection bays were declared open for all the teams who were ready with their car to undergo technical inspection, which is the first test that every team has to clear before it moves on to the next test. The team members reached the event site in the morning and started working on the car to make it ready for technical inspection. By noon the car was ready and was moved to the Technical Inspection Bay to get the car inspected.

Problems pointed out during the first attempt:

- The diameter of venturi was 0.5mm more than the dimension mentioned in the rulebook.
- The throttle pedal was coming in contact with the fluid reservoir.
- No inspection holes.

Solutions of the problem:

- The diameter of the venturi was reduced by adding a circular aluminum plate.
- The mount of the fluid reservoir was changed and the distance between the pedal and the reservoir was increased.
- Inspection holes were drilled on the chassis.



Image 05: First Attempt at Technical Inspection

The Business Event of the team was scheduled on Day 1 itself at 12:30 PM at the control tower. The Business Event of all the teams was scheduled to take place on that day itself. Here in, a few team members have to present a proposal, in front of a panel of judges to lure the investors to invest in them in order to start the production of their car on large scale. Two members of GTMS had appeared in front of the panel of judges and presented their Business case.

Also on Day 1 two seminars were arranged by the organizers for all the teams present at the event site. The first seminar was undertaken by Pat Clarke, who was one of the lead design judge of Formula Bharat 2017. In his seminar, he talked about his experiences with various Indian Formula Student teams, how they build their team, how they build their car and how they perform in an international event. He threw some light on the basic problems faced by each team in designing a Formula Student vehicle and gave some useful tips to build a well-engineered car. The second seminar was undertaken by Claude Rouelle (President, Optimum G) who also was one of the lead design judge. In his seminar, he gave some tips and guidelines on Vehicle

Dynamics and how to make a lighter and more compact car. This seminar proved to be very useful for all the teams present there because this was the major problem faced by most of the Indian teams. Day 1 ended with a Welcome Ceremony by the organizers to welcome all the teams, participants, volunteers, judges who took part in the event.

Date: 27th January, 2017 (Day-2)

The team continued working on the problems identified on Day 1 by the technical inspection judge and later during the day, the team appeared for the technical inspection again. The amendments done to the problems were identified on Day 1 were checked and few other rulebook violations were pointed out by the judge.



Image 06: Second Attempt at Technical Inspection

Problems pointed out during Day 2:

- Intake mount was not rigid.
- Reservoir was in the crushable zone.
- Steering play was more than 7 degrees.
- Nylock nuts were used near the rear brake disc (chances of nylock nut getting heated up)

Solutions of the problem:

- The intake mount was made rigid by adding an extra fixture.
- Reservoir was moved out of the crushable zone using extra spacers.

- Steering play was adjusted.
- Nylock nuts were changed to metal lock nuts near the rear brake disc.

Cost Event:

The Cost Event of the team took place in the allotted pit on Day-2. Team GTMS presented their cost to the judges of the event along with the unique features of their car like Solenoid Shifter and customized Radiator which helped them in reducing the cost of the car along with optimizing the features as per their requirements. Further after the presentation of the cost by the students it was now the turn of the judges to check if the participants have considered all the minute cost details of the car. Details as precise as cost of bolts used to mount the Seat, to the cable ties used to pack the wires together were asked for in the cost event.

In addition to the cost presentation, each team is given a task of presenting a Real Case Scenario of some particular situation provided to each team in advance. Team GTMS was given a situation where in they were tasked with production of 100,000 Wheel Rims for Formula Student vehicles for the coming 5 years.. The team in this case were supposed to propose a Business plan where they need to specify following details:

1. Feasibility Report
2. Cost of Steering Wheel
3. Factory Layout
4. Return on Investment
5. Consideration of production and manufacturing processes
6. Policies given to the employees.



Image 07: Team at Cost Event

After the Cost Event it was time for the team to take their car to the Design Bay for the Design Event. In the design event, the motive is to check the knowledge of the students about the design of the car. In the design event, the evaluation of the designing knowledge of members of the team was evaluated and later the feedback was provided to the team, where they need to focus for further improvement of the car.



Image 08: Team at Design Event

Design Event:

During the design event, entire team members of GTMS were called on the Design Event Bay so that each member can participate in this event and gain knowledge designing. The design evaluation process was led by Claude Rouelle, who paid more focus to the dynamic aspects of the car. The design of GTM 17 impressed every judge and gathered many words of praise.

The day ended with the team completing all the Static Events and with a Team Captain's debrief by the organizers where they briefed the captains about the Dynamics Events opening and closing time and the lineup.

Date: 28th January, 2017 (Day-3)

The day started with a Drivers Meeting for all the drivers where they were informed about the tracks and the heats per driver for the Dynamic Events. After solving the problems identified on Day-2, the team appeared again for the Technical inspection. This time a minor change of providing paddings to the hose clamps used for fuel lines was required by the judges and after doing so the team finally cleared the Technical Inspection. All the technical aspects of the Rulebook were cleared by the car. After clearing the Technical Inspection, the team further moved towards other tests that were in line to clear before participating in any event.



Image 09: Technical Inspection Sticker on GTM17

The car was moved to the fueling area where it was fueled up by the volunteers. Then the car was taken for tilt test where the car was mounted on a tilt table and the harness was tightened around the Main Roll hoop of the car so as to prevent car in case of roll over, and the car was tilted at 45 deg and then 60 deg from the horizontal and the car was checked for leaks. The fuel tank of the car was found to be leaking, so the car did not clear the tilt test. The car was taken back to the pit and the portion of the fuel tank from where the fuel was leaking was sealed using a M-seal. After sealing the fuel tank the car was again taken to the Tilt Area where the car was tilted again to check the leaks. During this attempt, no leaks were found and the GTM17 successfully cleared the Tilt Test.



Image 10: GTM17 at Tilt Test

After clearing the Tilt Test, the car moved on to the Noise Testing Area for the Noise Test where in, the engine is fired and noise level of the car @7500rpm is measured. The noise

in any scenario should not exceed 110db. The GTM17 in its first attempt measured 106db and cleared the Noise Test in the first attempt itself. Thereafter, the team went to the dynamic area for the Brake Test, where in, the car is supposed to get all its 4 wheels locked simultaneously. The GTM 17 was not able to clear the Brake Test in first few of the attempts but after adjusting the bias and the pressure in the wheels, the GTM17 successfully cleared the Brake Test. Finally, all the mandatory tests were cleared and the GTM17 was ready to run in the Dynamic Events.



Image 11: GTM17 with all its Stickers

Without wasting more time, the team members quickly changed the set of tires from wet tires to racing slicks and adjusted the pressure in the slicks to get a better grip of the car on the track. The time slot for Acceleration and Skidpad was over so the team could not participate in both these events but the team still had a chance to take part in Autocross. The lineup time for Autocross event was almost about to get over but the GTM17 reached the end of the line on time. Just when the team was ready with their car next to go, to take part in its first Dynamic Event in Formula Bharat 2017, heavy winds started blowing and the cones on the track were flying off. With the winds blowing heavily and the cones flying off the track, the track manager waved the flag and stopped the car which was running on the track. As it was unsafe to drive with cones changing their positions, and drivers would not be able to drive properly through the designated track, the track manager declared the track to be unsafe. So, the team was not able to participate in the Autocross event also.

At the end of Day-3, the GTM17 successfully cleared all its tests but unfortunately couldn't take part in any of the Dynamic Events. After all the dynamic events were over the Design Finals began in which all the top teams in the Design Event go their car reviewed by the Design Judges.

Date: 29th January, 2017 (Day-4)

It was the final day of the event and the team was all set and ready with the car to participate in the Endurance Race, which was scheduled to start at 10:00 AM. Before the endurance began, a track walk was scheduled for all the drivers who were going to drive in the Endurance, so that the drivers would get an idea about the track on which they were going to drive. The teams which did not take part in any Dynamic Events were given the first preference in the lineup for the Endurance race. The GTM17 was the 2nd car in the lineup for Endurance. The Endurance race comprises of a 22km race among different cars with the track being restricted to some 6ft and to check the driver's capabilities various hurdles in form of Zig-Zag pattern were designed in the race. Each team is supposed to complete 22km run on the track in order to successfully complete the Endurance Race. Along with that, teams are supposed to get their driver changed after completion of 11km.



Image 12: Track Layout of Kari Motor Speedway

GTM17 made a great start to the race and were going smooth and clean during the entire race. With some great driving skills of the drivers of GTM17, the team managed to complete the Endurance race with No Breakdown and leakage, and further emerged as the First Car to complete the Endurance Race in Formula Bharat 2017 competition. This in itself was a great achievement for all the members of the team. The team was filled with joy of having completed the Endurance race at their best and received a great applause from Team Pravega Racing for being the first team to complete the Endurance.

Post Endurance, the GTM17 was taken to the Parc Ferme for Post Endurance Inspection where all the 6 cars that completed the Endurance were inspected by the judges. After clearing the Post Endurance Inspection, the GTM17 was taken back to the pit from where along with all the other tools and package it was taken to the truck to send it back to its home. A prize distribution ceremony was organized in the end for all the teams that bagged the top positions in all the events. Team GT Motorsports ranked 8th overall amongst all the 58 teams from all over India that were present at the event site.



Image 13: Endurance Driver 1



Image 14: Endurance Driver 2



Image 15: GTM17 at Parc Ferme



Image 16: Team Photo with Claude Rouelle



Image 17: GTM17 being clicked by Pat Clarke



Image 18: Post Endurance Inspection

Lessons Learnt:

1. Do not listen to people who say you can't do it.
2. A Motivated team can overcome highest bureaucracy.
3. Don't Stick with Plan A for the event site. Consider Contingencies and Keep a backup plan ready for possible Breakdowns.
4. Stay Updated with the rulebook. There can be slight changes in the rules each time and can cause serious damage.
5. Hard work always pays off. Don't lose hope till the last moment.
6. Keep the whole team intact. Stay in touch with senior members and carry along the juniors with you.
7. Documentation. Each and every minute details should be documented and maintained well be it Design Decisions, Fabrication, Marketing or Management.
8. Focus evenly towards Static Events along with the Dynamic events. They can cause a huge difference in overall Standings. This is an Engineering Design Event and not a Motor Racing Event. Focus more on learning than Competing.
9. Practice makes a Machine Perfect. Test the Vehicle in similar track conditions. All failures must happen in the testing phase only. More Testing will give you more data for improvements.
10. Segregate the Cost Report into multiple parts and mark the Key Components for easy access during the presentation.
11. Dedicate few Students for Static Events well in advance. They are Cash points no matter how your car is you can score maximum in this.
12. Don't get carried away. Follow protocols strictly and ensure safety.
13. Every part including the last NUT & BOLT must be modelled in CAD.
14. Launch Event must be decided a month in Advance. Proper management to be ensure by the team. Don't miss out on any detail. Invitations to be sent in person and follow up should be taken.
15. "Straight Trees are cut first". Avoid Bureaucracy of any level and authority. You might have a good intention but it can go other ways and shoot against you.

Proposed Suggestions for Future Years:

1. A Separate Joint A/C should be opened which is to be operated by three people. 1) Treasurer of the team. 2) Team Faculty Advisor. (Who will be able to understand the necessity and urgency of the required item) 3) Official from GTU. (So even GTU can keep a live time track on where the money is going)
2. Codify a process to import goods. Any Pro Forma Invoice from a company abroad is valid for 2 weeks. It takes over two weeks to get approval for purchase according to current Procedure.
3. Proper allocation of workspace to team members. To have a permanent place with proper facilities boost the morale of the team working on a project. Same is the problem with Workshop. A working workshop will be really helpful for the team to get best out of their team members. Separate allocation of budget or prior talk to host institute must be done for the same.
4. The team must be given access to a proper working Fabrication Lab which has modern equipment like MIG/TIG Welding, Bench Drills, Alignment Bench, Basic CNC facilities like Turning & VMC.
5. A Dedicated Computer Lab for the Team with PC Configurations matching the modern needs of CAD & CAE Software. Students don't have such high end setups with them.

Appendix – 1: Team List

Car No.	Team Name	College Name
1	Formula Manipal	Manipal University
2	Camber Racing	SRM University
3	Pravega Racing	VIT UNIVERSITY VELLORE
4	Raftar Formula Racing	IIT Madras
5	Team SRIJAN	Birla Institute Of Technology
7	Team Fateh	Thapar University
8	Team Roadrunner	National Institute of Technology Rourkela
9	FIERCE FORMULA INDIA	VNR Vignana Jyothi Institute of Engineering and Technology
10	IITK Motorsports	Indian Institute of Technology, Kanpur
12	DJS Racing	D.J. Sanghvi College of Engineering
13	OJASWAT	Chandubhai S Patel Institute of Technology
14	Ashwa Racing	R. V. College of Engineering
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)
16	Team MECHISMU	INDIAN SCHOOL OF MINES
17	Team Unwired	National Institute of Technology Calicut
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering
19	Force Racing	kakatiya institute of technology and science
21	Amity Racing	Amity School of Engineering and Technology
22	DIT MOTORACING	DIT University
23	GT Motorsports	Gujarat Technological University
24	Pegasus Racing	PSG College of Technology
26	Team Mavericks	M.C.K.V.Institute of Engineering
27	Prahaar Racing	Saraswati College of Engineering
28	Wrench Wielders Racing	Symbiosis Institute of Technology
30	Aious Formula Student	Indira Gandhi Delhi technical University for Women
31	Veloce Racing	Vishwakarma Institute of Technology
32	GEU MOTORSPORTS	Graphic Era University
33	Team Octane Racing	College of Engineering Pune
36	GSRACERS	SGSITS
37	ENDEAVOUR RACING	AISSMS , College Of Engineering
38	Schnell Racing	Lokmanya Tilak College of Engineering, Koparkhairne.
39	Team Corsa	Chandigarh College Of Engineering and Technology

40	STALLION MOTORSPORTS	Smt.kashibai navale college of engineering Pune - 41
41	Shaurya Racing	VIT University Chennai Campus
42	RAMPAGE RACERS	JNTUH College of Engineering Hyderabad
44	Torrid Racing	Datta Meghe college of engineering
45	TEAM HAYA RACING	PES UNIVERSITY
46	Ethan Racing	Vidyavardhini's College of Engineering & Technology
48	MH-08 RACING	RAJENDRA MANE COLLEGE OF ENGINEERING AND TECHNOLOGY
49	HERMES RACING	KIIT UNIVERSITY
52	Team Evolution	IIT Guwahati
55	Team Terasvin	Sona College of Technology
56	KREINTO RACING	KL UNIVERSITY
57	TEAM MANAB	HALDIA INSTITUTE OF TECHNOLOGY
58	MPSTME MOTORSPORTS	SVKM's NMIMS MPSTME MUMBAI
59	Team Unique	RTC Institute of Technology
61	The Vayuputras	Indus university
63	Automantra racing	Galgotias University
64	Optimus	Chandigarh Engineering College
65	ZHCET FORMULA RACING	Aligarh Muslim University
66	FORMULA IMPACT	Manipal University Jaipur
67	MHSSCF1	M.H. SABOO SIDDIK COLLEGE OF ENGINEERING
68	STES Racing	Sinhgad Technical Education Society
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY, AMBI
70	Falcon Racing 2.0	MCKV Institute of Engineering
71	Zephyr Racing 2.0	Sri Krishna College Of Technology
72	Inspired Karters	BITS Pilani
73	Team KART	IIT Kharagpur

Appendix – 2: Event Schedule

FORMULA BHARAT 2017 TENTATIVE PARTICIPANT SCHEDULE					UPDATED:	Jan 27, 2017
Click here for Grounds Map		Click here for Participant Handbook				
Day #	Day	Date	Activity	Start Time	End Time	
Please note that Day 0 - Wed, Jan 25, is primarily a setup day. Majority of our staff will be busy with event setup, early registration.						
We request A and B teams arriving for early registration, to only arrive with the required team members to setup their pit. Other						
Day 0	Wednesday	January 25, 2017	Teams Vehicle / Truck Parking	8:30 AM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Pits - C Teams	8:30 AM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Registration - C Teams	8:30 AM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Crane Services	9:00 AM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Event Control	11:00 AM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Pre-Tech - C Teams	12:00 PM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Food Services	12:00 PM	5:00 PM	
Day 0	Wednesday	January 25, 2017	Hot Pits	1:00 PM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Early Registration - A & B Teams	2:00 PM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Pits - A & B Teams	2:00 PM	6:00 PM	
Day 0	Wednesday	January 25, 2017	Site closed for participants	7:00 PM	8:00 AM	
Day 1	Thursday	January 26, 2017	Teams Vehicle Parking	8:00 AM	7:00 PM	
Day 1	Thursday	January 26, 2017	Volunteers & Tech Orientation	8:00 AM	8:45 AM	
Day 1	Thursday	January 26, 2017	Pits	8:00 AM	6:00 PM	
Day 1	Thursday	January 26, 2017	Registration - Teams	8:15 AM	5:45 PM	
Day 1	Thursday	January 26, 2017	Event Control	8:30 AM	6:00 PM	
Day 1	Thursday	January 26, 2017	Pre-Tech - C Teams	9:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Registration - Visitors	9:00 AM	4:00 PM	
Day 1	Thursday	January 26, 2017	Tire Mounting Station	9:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Tech Inspection - Tech	9:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Tech Inspection - Scales	9:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Hot Pits	9:00 AM	6:00 PM	
Day 1	Thursday	January 26, 2017	Static - Business - C Teams	9:15 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Food Services	9:30 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Fuel	10:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Tech Inspection - Tilt	10:30 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Tech Inspection - Noise	11:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Tech Inspection - Brakes	11:00 AM	5:00 PM	
Day 1	Thursday	January 26, 2017	Lunch (Staff, Volunteers)	12:00 PM	12:30 PM	
Day 1	Thursday	January 26, 2017	Presentation by Pat Clarke	1:00 PM	2:00 PM	
Day 1	Thursday	January 26, 2017	Vehicle Testing Area	2:00 PM	5:00 PM	
Day 1	Thursday	January 26, 2017	Engine Testing Area	2:00 PM	5:00 PM	

Day 1	Thursday	January 26, 2017	Presentation by Claude Rouelle	3:45 PM	4:45 PM
Day 1	Thursday	January 26, 2017	Panoramic Photo	5:00 PM	5:30 PM
Day 1	Thursday	January 26, 2017	Welcome Ceremony	5:45 PM	6:25 PM
Day 1	Thursday	January 26, 2017	Volunteers' Debrief	6:45 PM	7:00 PM
Day 1	Thursday	January 26, 2017	Site closed	7:00 PM	8:30 AM
Day 2	Friday	January 27, 2017	Registration - Teams	8:30 AM	6:00 PM
Day 2	Friday	January 27, 2017	Event Control	8:00 AM	6:00 PM
Day 2	Friday	January 27, 2017	Pits	8:30 AM	6:00 PM
Day 2	Friday	January 27, 2017	Tire Mounting Station	9:00 AM	
Day 2	Friday	January 27, 2017	Team's Pictures	9:00 AM	5:30 PM
Day 2	Friday	January 27, 2017	Pre-Tech - C Teams	9:00 AM	6:00 PM
Day 2	Friday	January 27, 2017	Tech Inspection - Tech	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Tech Inspection - Scales	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Tech Inspection - Tilt	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Tech Inspection - Noise	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Tech Inspection - Brakes	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Fuel	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Hot Pits	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Vehicle Testing Area	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Engine Testing Area	9:00 AM	5:45 PM
Day 2	Friday	January 27, 2017	Static - Design	9:15 AM	5:00 PM
Day 2	Friday	January 27, 2017	Static - Cost	9:30 AM	5:00 PM
Day 2	Friday	January 27, 2017	Static - Business	9:30 AM	5:00 PM
Day 2	Friday	January 27, 2017	Registration - Visitors	10:00 AM	4:00 PM
Day 2	Friday	January 27, 2017	Food Services	10:00 AM	5:00 PM
Day 2	Friday	January 27, 2017	Lunch (Staff and Volunteers)	12:00 PM	12:30 PM
Day 2	Friday	January 27, 2017	Team Captains Debrief	5:30 PM	5:45 PM
Day 2	Friday	January 27, 2017	Site closed	6:30 PM	8:30 AM
Day 3	Saturday	January 28, 2017	Registration Booth	8:30 AM	6:00 PM
Day 3	Saturday	January 28, 2017	Event Control	8:30 AM	6:00 PM
Day 3	Saturday	January 28, 2017	Pits	8:30 AM	6:00 PM
Day 3	Saturday	January 28, 2017	Dynamic Events - Driver Briefing	8:45 AM	9:10 AM
Day 3	Saturday	January 28, 2017	Scores Release - Design, Business, Co	9:00 AM	9:00 AM
Day 3	Saturday	January 28, 2017	Static Scores Protest Period	9:00 AM	9:30 AM
Day 3	Saturday	January 28, 2017	Registration - Visitors	9:00 AM	4:00 PM
Day 3	Saturday	January 28, 2017	Tire Mounting Station	9:00 AM	5:00 PM
Day 3	Saturday	January 28, 2017	Tech Inspection - Tech (On Appt)	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Tech Inspection - Scales (On Appt)	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Tech Inspection - Tilt (On Appt)	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Tech Inspection - Noise (On Appt)	9:00 AM	5:45 PM

Day 3	Saturday	January 28, 2017	Tech Inspection - Brakes (On Appt)	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Fuel	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Hot Pits	9:00 AM	5:45 PM
Day 3	Saturday	January 28, 2017	Vehicle Testing Area	9:00 AM	5:00 PM
Day 3	Saturday	January 28, 2017	Engine Testing Area	9:00 AM	5:00 PM
Day 3	Saturday	January 28, 2017	Skidpad	9:30 AM	12:45 PM
Day 3	Saturday	January 28, 2017	Acceleration	9:30 AM	12:45 PM
Day 3	Saturday	January 28, 2017	Food Services	10:00 AM	5:00 PM
Day 3	Saturday	January 28, 2017	Student Certificate Pick Up	10:00 AM	6:00 PM
Day 3	Saturday	January 28, 2017	Teams' Truck Move-In and Move-Out	10:00 AM	6:00 PM
Day 3	Saturday	January 28, 2017	Presentation by Pritesh Doshi on bearing	1:00 PM	1:30 PM
Day 3	Saturday	January 28, 2017	Autocross Track Walk	1:15 PM	1:40 PM
Day 3	Saturday	January 28, 2017	Autocross	2:00 PM	4:45 PM
Day 3	Saturday	January 28, 2017	Transponder Rental	5:00 PM	6:00 PM
Day 3	Saturday	January 28, 2017	Team Captains' Debrief	5:00 PM	5:15 PM
Day 3	Saturday	January 28, 2017	Design Finals & Review	5:15 PM	6:00 PM
Day 3	Saturday	January 28, 2017	Site closed	7:00 PM	8:30 AM
Day 3	Saturday	January 28, 2017	Endurance Order Released online	11:00 PM	11:00 PM
Day 4	Sunday	January 29, 2017	Registration Booth	8:30 AM	6:00 PM
Day 4	Sunday	January 29, 2017	Event Control	8:30 AM	6:00 PM
Day 4	Sunday	January 29, 2017	Pits	8:30 AM	6:00 PM
Day 4	Sunday	January 29, 2017	Dynamic Events - Driver Briefing	8:50 AM	9:15 AM
Day 4	Sunday	January 29, 2017	Scores Release - Skidpad, Acceleration	9:00 AM	9:00 AM
Day 4	Sunday	January 29, 2017	Protest Period - Skidpad, Acceleration, .	9:00 AM	9:30 AM
Day 4	Sunday	January 29, 2017	Tech Inspection - Tech (On Appt)	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Tech Inspection - Scales (On Appt)	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Tech Inspection - Tilt (On Appt)	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Tech Inspection - Noise (On Appt)	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Tech Inspection - Brakes (On Appt)	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Tire Mounting Station	9:00 AM	12:00 PM
Day 4	Sunday	January 29, 2017	Vehicle Testing Area	9:00 AM	3:00 PM
Day 4	Sunday	January 29, 2017	Engine Testing Area	9:00 AM	3:00 PM
Day 4	Sunday	January 29, 2017	Endurance Track Walk	9:15 AM	9:45 AM
Day 4	Sunday	January 29, 2017	Fuel	9:00 AM	5:00 PM
Day 4	Sunday	January 29, 2017	Endurance	10:00 AM	3:45 PM
Day 4	Sunday	January 29, 2017	Fuel Efficiency and Parc Ferme	10:00 AM	6:00 PM
Day 4	Sunday	January 29, 2017	Food Services	10:00 AM	5:00 PM
Day 4	Sunday	January 29, 2017	Student Certificate Pick-Up	10:00 AM	5:00 PM
Day 4	Sunday	January 29, 2017	Crane Service	10:00 AM	7:00 PM
Day 4	Sunday	January 29, 2017	Teams' Truck Move-In and Move-Out	10:00 AM	7:00 PM
Day 4	Sunday	January 29, 2017	Awards Ceremony	5:00 PM	6:00 PM
Day 4	Sunday	January 29, 2017	Site closed	7:30 PM	

Appendix – 3: Results**Design Results**

Car No.	Team Name	College Name	Score	Rank
12	DJS Racing	D.J. Sanghvi College of Engineering	150	1
2	Camber Racing	SRM University	140	2
1	Formula Manipal	Manipal University	136	3
4	Raftar Formula Racing	IIT Madras	125	4
24	Pegasus Racing	PSG College of Technology	120	5
65	ZHCET FORMULA RACING	Aligarh Muslim University	110	6
5	Team SRIJAN	Birla Institute Of Technology	100	7
14	Ashwa Racing	R. V. College of Engineering	95	8
38	Schnell Racing	Lokmanya Tilak College of Engineering, Koparkhairne.	90	9
41	Shaurya Racing	VIT University Chennai Campus	90	9
45	TEAM HAYA RACING	PES UNIVERSITY	90	9
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	85	12
40	STALLION MOTORSPORTS	Smt.kashibai navale college of engineering Pune -41	85	12
19	Force Racing	kakatiya institute of technology and science	70	14
23	GT Motorsports	Gujarat Technological University	70	14
30	Aious Formula Student	Indira Gandhi Delhi technical University for Women	70	14
33	Team Octane Racing	College of Engineering Pune	70	14
37	ENDEAVOUR RACING	AISSMS , College Of Engineering	70	14
70	Falcon Racing 2.0	MCKV Institute of Engineering	70	14
27	Prahaar Racing	Saraswati College of Engineering	70	14
7	Team Fateh	Thapar University	65	21
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	65	21
16	Team MECHISMU	INDIAN SCHOOL OF MINES	65	21
22	DIT MOTORACING	DIT University	65	21
8	Team Roadrunner	National Institute of Technology Rourkela	55	25
46	Ethan Racing	Vidyavardhini's College of Engineering & Technology	55	25
13	OJASWAT	Chandubhai S Patel Institute of Technology	45	27

17	Team Unwired	National Institute of Technology Calicut	40	28
31	Veloce Racing	Vishwakarma Institute of Technology	40	28
32	GEU MOTORSPORTS	Graphic Era University	40	28
49	HERMES RACING	KIIT UNIVERSITY	40	28
52	Team Evolution	IIT Guwahati	40	28
56	KREINTO RACING	KL UNIVERSITY	40	28
58	MPSTME MOTORSPORTS	SVKM's NMIMS MPSTME MUMBAI	40	28
73	Team KART	IIT Kharagpur	40	28
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY, AMBI	35	36
21	Amity Racing	Amity School of Engineering and Technology	30	37
28	Wrench Welders Racing	Symbiosis Institute of Technology	30	37
36	GSRACERS	SGSITS	30	37
61	The Vayuputras	Indus university	30	37
63	Automantra racing	Galgotias University	30	37
48	MH-08 RACING	RAJENDRA MANE COLLEGE OF ENGINEERING AND TECHNOLOGY	25	42
72	Inspired Karters	BITS Pilani	25	42
71	Zephyr Racing 2.0	Sri Krishna College Of Technology	20	44
3	Pravega Racing	VIT UNIVERSITY VELLORE	0	45
9	FIERCE FORMULA INDIA	VNR Vignana Jyothi Institute of Engineering and Technology	0	45
10	IITK Motorsports	Indian Institute of Technology, Kanpur	0	45
26	Team Mavericks	M.C.K.V. Institute of Engineering	0	45
39	Team Corsa	Chandigarh College Of Engineering and Technology	0	45
42	RAMPAGE RACERS	JNTUH College of Engineering Hyderabad	0	45
44	Torrid Racing	Datta Meghe college of engineering	0	45
55	Team Terasvin	Sona College of Technology	0	45
57	TEAM MANAB	HALDIA INSTITUTE OF TECHNOLOGY	0	45
59	Team Unique	RTC Institute of Technology	0	45
64	Optimus	Chandigarh Engineering College	0	45
66	FORMULA IMPACT	Manipal University Jaipur	0	45
67	MHSSCF1	M.H. SABOO SIDDIK COLLEGE OF ENGINEERING	0	45
68	STES Racing	Sinhgad Technical Education Society	0	45

Cost Event:

Car No.	Team Name	College Name	Score	Rank
3	Pravega Racing	VIT UNIVERSITY VELLORE	75.11	1
2	Camber Racing	SRM University	71.02	2
14	Ashwa Racing	R. V. College of Engineering	64.86	3
24	Pegasus Racing	PSG College of Technology	62.34	4
1	Formula Manipal	Manipal University	60.72	5
12	DJS Racing	D.J. Sanghvi College of Engineering	60.2	6
40	STALLION MOTORSPORTS	Smt.kashibai navale college of engineering Pune -41	55.28	7
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	53.59	8
22	DIT MOTORACING	DIT University	51.86	9
5	Team SRIJAN	Birla Institute Of Technology	51.35	10
33	Team Octane Racing	College of Engineering Pune	51.14	11
27	Prahaar Racing	Saraswati College of Engineering	49.15	12
73	Team KART	IIT Kharagpur	47.67	13
49	HERMES RACING	KIIT UNIVERSITY	47.4	14
52	Team Evolution	IIT Guwahati	46.44	15
4	Raftar Formula Racing	IIT Madras	42.61	16
65	ZHCET FORMULA RACING	Aligarh Muslim University	41.14	17
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	40.25	18
16	Team MECHISMU	INDIAN SCHOOL OF MINES	38.61	19
7	Team Fateh	Thapar University	37.97	20
32	GEU MOTORSPORTS	Graphic Era University	34.89	21
23	GT Motorsports	Gujarat Technological University	34.55	22
41	Shaurya Racing	VIT University Chennai Campus	34.14	23
13	OJASWAT	Chandubhai S Patel Institute of Technology	33.49	24
17	Team Unwired	National Institute of Technology Calicut	32.4	25
48	MH-08 RACING	RAJENDRA MANE COLLEGE OF ENGINEERING AND TECHNOLOGY	30.75	26
38	Schnell Racing	Lokmanya Tilak College of Engineering, Koparkhairne.	30.53	27
58	MPSTME MOTORSPORTS	SVKM's NMIMS MPSTME MUMBAI	28.25	28
31	Veloce Racing	Vishwakarma Institute of Technology	26.21	29

69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY, AMBI	23.99	30
45	TEAM HAYA RACING	PES UNIVERSITY	14.88	31
9	FIERCE FORMULA INDIA	VNR Vignana Jyothi Institute of Engineering and Technology	10	32
8	Team Roadrunner	National Institute of Technology Rourkela	8.73	33
56	KREINTO RACING	KL UNIVERSITY	8	34
72	Inspired Karters	BITS Pilani	5.45	35
70	Falcon Racing 2.0	MCKV Institute of Engineering	5.15	36
61	The Vayuputras	Indus university	3	37
63	Automantra racing	Galgotias University	3	37
30	Aious Formula Student	Indira Gandhi Delhi technical University for Women	0.5	39
28	Wrench Wielders Racing	Symbiosis Institute of Technology	0	40
21	Amity Racing	Amity School of Engineering and Technology	0	40
57	TEAM MANAB	HALDIA INSTITUTE OF TECHNOLOGY	0	40
39	Team Corsa	Chandigarh College Of Engineering and Technology	0	40
46	Ethan Racing	Vidyavardhini's College of Engineering & Technology	0	40
37	ENDEAVOUR RACING	AISSMS , College Of Engineering	0	40
10	IITK Motorsports	Indian Institute of Technology, Kanpur	0	40
19	Force Racing	kakatiya institute of technology and science	0	40
26	Team Mavericks	M.C.K.V. Institute of Engineering	0	40
36	GSRACERS	SGSITS	0	40
42	RAMPAGE RACERS	JNTUH College of Engineering Hyderabad	0	40
44	Torrid Racing	Datta Meghe college of engineering	0	40
55	Team Terasvin	Sona College of Technology	0	40
59	Team Unique	RTC Institute of Technology	0	40
64	Optimus	Chandigarh Engineering College	0	40
66	FORMULA IMPACT	Manipal University Jaipur	0	40
67	MHSSCF1	M.H. SABOO SIDDIK COLLEGE OF ENGINEERING	0	40
68	STES Racing	Sinhgad Technical Education Society	0	40
71	Zephyr Racing 2.0	Sri Krishna College Of Technology	0	40

Business Plan Presentation:

Car No.	Team Name	College Name	Score	Rank
3	Pravega Racing	VIT UNIVERSITY VELLORE	75	1
73	Team KART	IIT Kharagpur	73.35	2
4	Raftar Formula Racing	IIT Madras	71.7	3
22	DIT MOTORACING	DIT University	71.7	3
24	Pegasus Racing	PSG College of Technology	71.7	3
2	Camber Racing	SRM University	70.05	6
5	Team SRIJAN	Birla Institute Of Technology	67.58	7
33	Team Octane Racing	College of Engineering Pune	65.93	8
68	STES Racing	Sinhgad Technical Education Society	65.11	9
52	Team Evolution	IIT Guwahati	64.29	10
12	DJS Racing	D.J. Sanghvi College of Engineering	63.46	11
1	Formula Manipal	Manipal University	61.81	12
40	STALLION MOTORSPORTS	Smt.kashibai navale college of engineering Pune -41	61.81	12
23	GT Motorsports	Gujarat Technological University	60.16	14
63	Automantra racing	Galgotias University	60.16	14
14	Ashwa Racing	R. V. College of Engineering	59.34	16
16	Team MECHISMU	INDIAN SCHOOL OF MINES	59.34	16
37	ENDEAVOUR RACING	AISSMS , College Of Engineering	59.34	16
45	TEAM HAYA RACING	PES UNIVERSITY	59.34	16
56	KREINTO RACING	KL UNIVERSITY	59.34	16
41	Shaurya Racing	VIT University Chennai Campus	57.69	21
65	ZHCET FORMULA RACING	Aligarh Muslim University	57.69	21
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	56.87	23
28	Wrench Wielders Racing	Symbiosis Institute of Technology	56.87	23
72	Inspired Karters	BITS Pilani	56.04	25
39	Team Corsa	Chandigarh College Of Engineering and Technology	55.22	26
32	GEU MOTORSPORTS	Graphic Era University	52.75	27
58	MPSTME MOTORSPORTS	SVKM's NMIMS MPSTME MUMBAI	52.75	27
17	Team Unwired	National Institute of Technology Calicut	49.45	29
46	Ethan Racing	Vidyavardhini's College of Engineering & Technology	48.63	30

21	Amity Racing	Amity School of Engineering and Technology	47.8	31
61	The Vayuputras	Indus university	46.98	32
7	Team Fateh	Thapar University	46.15	33
30	Aious Formula Student	Indira Gandhi Delhi technical University for Women	46.15	33
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	44.51	35
48	MH-08 RACING	RAJENDRA MANE COLLEGE OF ENGINEERING AND TECHNOLOGY	44.51	35
13	OJASWAT	Chandubhai S Patel Institute of Technology	43.68	37
36	GSRACERS	SGSITS	43.68	37
8	Team Roadrunner	National Institute of Technology Rourkela	42.86	39
31	Veloce Racing	Vishwakarma Institute of Technology	42.86	39
19	Force Racing	kakatiya institute of technology and science	42.03	41
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY,AMBI	41.21	42
9	FIERCE FORMULA INDIA	VNR Vignana Jyothi Institute of Engineering and Technology	40.38	43
55	Team Terasvin	Sona College of Technology	40.38	43
57	TEAM MANAB	HALDIA INSTITUTE OF TECHNOLOGY	40.38	43
70	Falcon Racing 2.0	MCKV Institute of Engineering	40.38	43
71	Zephyr Racing 2.0	Sri Krishna College Of Technology	35.44	47
49	HERMES RACING	KIIT UNIVERSITY	33.79	48
27	Prahaar Racing	Saraswati College of Engineering	32.14	49
38	Schnell Racing	Lokmanya Tilak College of Engineering, Koparkhairne.	30.49	50
66	FORMULA IMPACT	Manipal University Jaipur	18.96	51
10	IITK Motorsports	Indian Institute of Technology, Kanpur	0	
26	Team Mavericks	M.C.K.V.Institute of Engineering	0	
42	RAMPAGE RACERS	JNTUH College of Engineering Hyderabad	0	
44	Torrid Racing	Datta Meghe college of engineering	0	
59	Team Unique	RTC Institute of Technology	0	
64	Optimus	Chandigarh Engineering College	0	
67	MHSSCF1	M.H. SABOO SIDDIK COLLEGE OF ENGINEERING	0	

Skidpad Results:

				0-50	
Car No.	Team Name	College Name	Best Time	Final Score	Rank
4	Raftar Formula Racing	IIT Madras	11.44	50	1
3	Pravega Racing	VIT UNIVERSITY VELLORE	11.45	49.77	2
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	11.74	43.34	3
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	12.65	25.97	4
33	Team Octane Racing	College of Engineering Pune	12.76	24.11	5
24	Pegasus Racing	PSG College of Technology	12.97	20.71	6

The team was not able to participate in Skidpad Event as, by the time they were done clearing all the tests the time slot for which the Skidpad track was open had ended.

Acceleration Results:

				0-75	
Car No.	Team Name	College Name	Best Time	Final Score	Rank
3	Pravega Racing	VIT UNIVERSITY VELLORE	4.483	75	1
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	4.954	54.61	2
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	5.498	35.4	3
33	Team Octane Racing	College of Engineering Pune	5.546	33.89	4
4	Raftar Formula Racing	IIT Madras	5.986	21.14	5
24	Pegasus Racing	PSG College of Technology	6.154	16.76	6
12	DJS Racing	D.J. Sanghvi College of Engineering	10.54	3.5	7

The team was not able to participate in Acceleration Event as, by the time they were done clearing all the tests the time slot for which the Acceleration track was open had ended.

Autocross Results:

Car No.	Team Name	College Name	Best Time	Final Score	Rank
3	Pravega Racing	VIT UNIVERSITY VELLORE	101.024	150	1
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	110.033	112.41	2
2	Camber Racing	SRM University	117.914	84.23	3
4	Raftar Formula Racing	IIT Madras	137.564	28.04	4
12	DJS Racing	D.J. Sanghvi College of Engineering	162.984	7.5	5
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	156.004	7.5	5
24	Pegasus Racing	PSG College of Technology	173.93	7.5	5
33	Team Octane Racing	College of Engineering Pune	162.577	7.5	5

The team was not able to participate in Autocross Event as, by the time they were done clearing all the tests the time slot for which the Autocross track was open had ended.

Endurance Results:

				0-300	
Car No.	Team Name	College Name	Endurance Time	Final Score	Rank
4	Raftar Formula Racing	IIT Madras	1512.3	300	1
3	Pravega Racing	VIT UNIVERSITY VELLORE	1542.79	284.08	2
2	Camber Racing	SRM University	1606.35	252.84	3
33	Team Octane Racing	College of Engineering Pune	1666.77	225.34	4
23	GT Motorsports	Gujarat Technological University	2066.14	84.07	5
24	Pegasus Racing	PSG College of Technology	2473.93	14	6
12	DJS Racing	D.J. Sanghvi College of Engineering	DNF	12	7
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	DNF	9	8
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY,AMBI	DNF	7	9
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	DNF	6	10
14	Ashwa Racing	R. V. College of Engineering	DNF	5	11

Efficiency Results:

				0-100	
Car No.	Team Name	College Name	Fuel Used (L)	Final Score	Rank
4	Raftar Formula Racing	IIT Madras	1.6	100	1
33	Team Octane Racing	College of Engineering Pune	2.15	80.26	2
12	DJS Racing	D.J. Sanghvi College of Engineering	1.75	78.56	3
23	GT Motorsports	Gujarat Technological University	1.8	77.97	4
2	Camber Racing	SRM University	2.75	66.12	5
3	Pravega Racing	VIT UNIVERSITY VELLORE	3.9	39	6
24	Pegasus Racing	PSG College of Technology	2.6	31.96	7
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	3.1	0	8
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY,AMBI	0	0	8
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	0	0	8
14	Ashwa Racing	R. V. College of Engineering	0	0	8

Overall Result:

Car No.	Team Name	College Name	TOTAL	FINAL RANKING
3	Pravega Racing	VIT UNIVERSITY VELLORE	747.96	1
4	Raftar Formula Racing	IIT Madras	738.49	2
2	Camber Racing	SRM University	684.26	3
33	Team Octane Racing	College of Engineering Pune	558.18	4
18	Team Kratos Racing	Pimpri Chinchwad College of Engineering	392.61	5
12	DJS Racing	D.J. Sanghvi College of Engineering	375.22	6
24	Pegasus Racing	PSG College of Technology	344.96	7
23	GT Motorsports	Gujarat Technological University	326.75	8
1	Formula Manipal	Manipal University	258.53	9
15	Team VAMOS AUTOCROSS	SINHGAD ACADEMY OF ENGINEERING,KONDHWA(BK)	246.82	10
14	Ashwa Racing	R. V. College of Engineering	224.2	11
5	Team SRIJAN	Birla Institute Of Technology	218.93	12
65	ZHCET FORMULA RACING	Aligarh Muslim University	208.83	13
40	STALLION MOTORSPORTS	Smt.kashibai navale college of engineering Pune -41	202.1	14
22	DIT MOTORACING	DIT University	188.57	15
41	Shaurya Racing	VIT University Chennai Campus	181.84	16
16	Team MECHISMU	INDIAN SCHOOL OF MINES	162.95	17
45	TEAM HAYA RACING	PES UNIVERSITY	154.23	18
27	Prahaar Racing	Saraswati College of Engineering	151.29	19
38	Schnell Racing	Lokmanya Tilak College of Engineering, Koparkhairne.	151.03	20
52	Team Evolution	IIT Guwahati	150.72	21
7	Team Fateh	Thapar University	149.12	22
37	ENDEAVOUR RACING	AISSMS , College Of Engineering	129.34	23
32	GEU MOTORSPORTS	Graphic Era University	127.64	24
13	OJASWAT	Chandubhai S Patel Institute of Technology	122.17	25
17	Team Unwired	National Institute of Technology Calicut	121.85	26
49	HERMES RACING	KIIT UNIVERSITY	121.19	27

58	MPSTME MOTORSPORTS	SVKM's NMIMS MPSTME MUMBAI	121	28
30	Aious Formula Student	Indira Gandhi Delhi technical University for Women	116.65	29
70	Falcon Racing 2.0	MCKV Institute of Engineering	115.54	30
31	Veloce Racing	Vishwakarma Institute of Technology	109.06	31
56	KREINTO RACING	KL UNIVERSITY	107.34	32
69	TEAM REVOLUTION	D. Y. PATIL SCHOOL OF ENGINEERING ACADEMY, AMBI	107.19	33
8	Team Roadrunner	National Institute of Technology Rourkela	106.59	34
46	Ethan Racing	Vidyavardhini's College of Engineering & Technology	103.63	35
48	MH-08 RACING	RAJENDRA MANE COLLEGE OF ENGINEERING AND TECHNOLOGY	100.25	36
63	Automantra racing	Galgotias University	93.16	37
28	Wrench Wielders Racing	Symbiosis Institute of Technology	86.87	38
72	Inspired Karters	BITS Pilani	86.49	39
61	The Vayuputras	Indus university	79.98	40
21	Amity Racing	Amity School of Engineering and Technology	77.8	41
36	GSRACERS	SGSITS	73.68	42
68	STES Racing	Sinhgad Technical Education Society	65.11	43
73	Team KART	IIT Kharagpur	61.02	44
71	Zephyr Racing 2.0	Sri Krishna College Of Technology	55.44	45
39	Team Corsa	Chandigarh College Of Engineering and Technology	55.22	46
19	Force Racing	kakatiya institute of technology and science	42.03	47
55	Team Terasvin	Sona College of Technology	40.38	48
57	TEAM MANAB	HALDIA INSTITUTE OF TECHNOLOGY	40.38	49
66	FORMULA IMPACT	Manipal University Jaipur	18.96	50
9	FIERCE FORMULA INDIA	VNR Vignana Jyothi Institute of Engineering and Technology	0	51
42	RAMPAGE RACERS	JNTUH College of Engineering Hyderabad	0	51

44	Torrid Racing	Datta Meghe college of engineering	0	
59	Team Unique	RTC Institute of Technology	0	
64	Optimus	Chandigarh Engineering College	0	
67	MHSSCF1	M.H. SABOO SIDDIK COLLEGE OF ENGINEERING	0	
10	IITK Motorsports	Indian Institute of Technology, Kanpur	0	
26	Team Mavericks	M.C.K.V.Institute of Engineering	0	

Appendix -04:

Areas of Development for 2017-2018 Campaign for Team GT Motorsports.

Below mentioned is a list of problem statements or new areas where the team will be working and need helps from other faculties and Industry:

1. Design & Development of Engine Air Intake System for Formula Student Vehicles.
2. Design & Development of Engine Exhaust System for Formula Student Vehicles.
3. Mathematical Modelling of Engine for better understanding & simulation of designs.
4. Development of light weight and high Thermal efficient Water cooling system for KTM 390 engine.
5. Understand and implement new age materials like Plastics and Composites in Manufacturing of vehicles.
6. Understand and implement modern Race Car Aerodynamics to upgrade performance of the vehicle.
7. Train Students on Computer Aided machining & Gain hardware help from industry for the same.
8. Understand and learn various Load Case Scenarios for Analysis and Validation of designed components.
9. Design and develop a custom wiring harness for the vehicle.
10. Custom ECU Programing and Engine tuning using an Engine Dynamometer.
11. Live Time Data Acquisition for Engine & Vehicle Performance.
12. Design & Development of Electro Pneumatic or Electro-Magnetic Gear Shifter for the vehicle.
13. Incorporating Tyre Data for deriving actual load cases acting on the vehicle.
14. Developing a functional simulation of Aerodynamic package which will include front wing, rear wing and diffuser. This will further aid in achieving higher cornering speeds.
15. High weight reduction in outboard department by reducing rim size and tyre size. Thus, decreasing the unsprung mass.