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**FORMULA**  
**MANIPAL**  
**ELECTRIC**

*Engineered with Passion*

# BROCHURE 2020



# ABOUT FSAE AND FORMULA STUDENT

Formula Student is the most sophisticated engineering design competition at the university level, which aims to inspire young, talented minds to design and build an open-wheel, single-seater Formula-style race car. It is organized by the Formula Society of Automotive Engineers and more than 2000 students from over 23 countries come to this competition to showcase their technical talents.

In the competition, the prototype car is evaluated in terms of design, production cost, reliability, maintainability and performance. This competition takes place at locations across the globe such as USA, UK, Australia, Germany, Austria, etc.

These competitions allow students to apply classroom principles in real life, giving meaning to theoretical studies. The static events include an engineering design presentation where the team explains the design principle behind the car, a Cost Analysis and a Business Presentation. The car must clear all parts of the excruciating technical scrutiny: Technical Inspection, Tilt/Rollover stability test, Noise test, and Brake test. Only after clearing the technical scrutiny can the car take part in Dynamic events: Acceleration, Skidpad, Autocross, and Endurance. This competition is considered as an ideal recruiting ground for young engineers.

## STATIC EVENTS

(325/1000)

**ENGINEERING DESIGN**  
(150 POINTS)

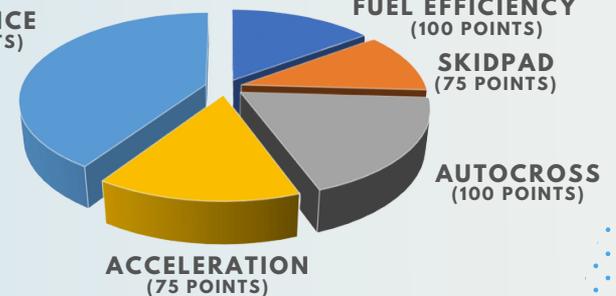


**BUSINESS EVENT**  
(75 POINTS)

**COST ANALYSIS**  
(100 POINTS)

## DYNAMIC EVENTS

**ENDURANCE**  
(325 POINTS)



**FUEL EFFICIENCY**  
(100 POINTS)

**SKIDPAD**  
(75 POINTS)

**AUTOCROSS**  
(100 POINTS)

**ACCELERATION**  
(75 POINTS)

# ABOUT US



**Our mission:** To conceptualize, design, fabricate, test and race a single-seater Formula-styled race car.

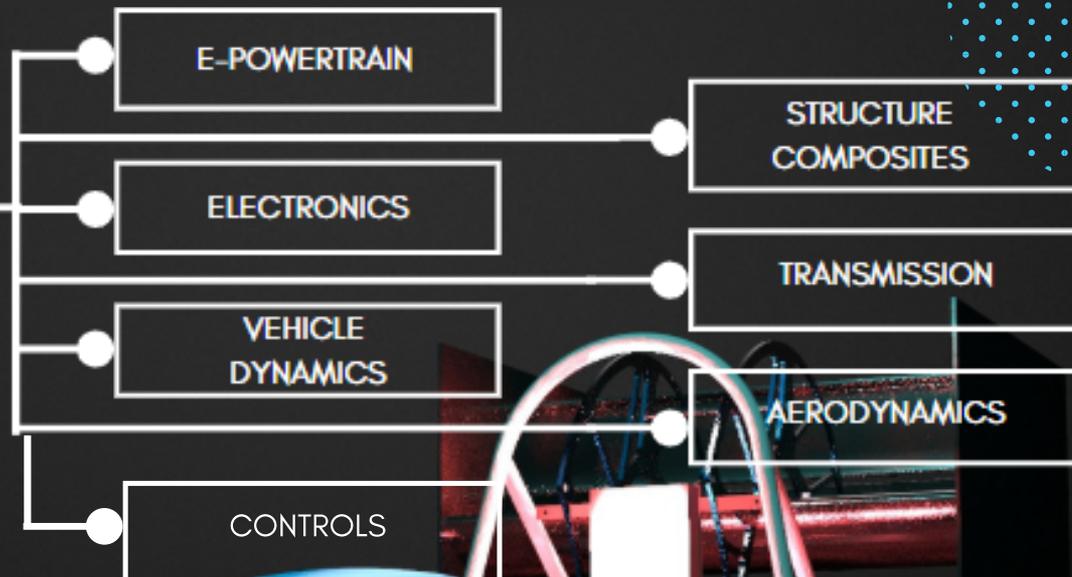
Formula Manipal is a team of undergraduate students that lives by the motto 'Engineered with Passion' and gets off on the aim of building and racing the best formula-style race car they can. Starting as just an idea back in 2007, FM has risen against all odds to become arguably the best Indian FSAE team to race the International circuits.

Our goal for the coming season is to build a car that sets the bar even higher in terms of engineering design, a car

that is lighter than its predecessors yet performs even better. This task would undoubtedly be a challenge but we at Formula Manipal believe that we can exceed our expectations and build a car that is 'Engineered with Passion'.

With an international podium finish and 8 trophies in its bag, FM strives to build better cars every season. Formula Manipal participates in Formula Student competitions across the globe, improving its performances each time with a singular goal to be the best.

# TEAM STRUCTURE



# OUR JOURNEY



## INTERNATIONAL COMPETITIONS

- In 2008, the team took the FM08 to Italy, where they received the Farthest Travelled Team award.
- 2009 saw the FM09 go to the U.K. where the team stood 10th in the cost report.
- In 2010, the FMX team came 4th in the cost event at FS Austria and was the lightest Indian FSAE car at the competition. They were also given the award of 'Most Motivated Team'.
- The FMXI team, which went to Italy in 2011, stood 16th in the cost event.
- In 2013, the FMX3 set the tracks blazing at FS Germany and FS Czech Republic. With a personal best of 0-75m in 4.51 seconds, the FMX3 was the Fastest Indian FSAE car. The team stood 2nd in the cost event at FSG, making Formula ManiPal the only Indian team to achieve a podium finish at the competition. It was also the only Indian team to complete Endurance with Electro-pneumatic gear shifting.

- In 2014, the FMX4 went to the CzechRing, Czech Republic and completed the Acceleration event with a timing of 4.81 seconds and Skidpad event with a timing of 8.120s. The car blazed through AutoCross with a timing of 71.710s.
- FMX4 participated in Formula Design Challenge 2015 and became the first car to complete all parts of the Technical Scrutiny. They secured 3rd, 5th and 6th position in Engineering Design, Business Presentation and Cost Analysis events respectively completing the Static events. It went on to break the existing National Record for Acceleration with a timing of 4.19s. It secured a 2nd and 3rd place finish in Endurance and Efficiency event and the Autocross event while clocking in the best laptime with 83.95s. Formula ManiPal took the podium in all Dynamic events and won the most number of trophies, a total of seven and clinched the 2nd Position overall.
- The FMX6 in 2016 team was the best Indian team in the Czech Republic Competition securing an overall position of 16th in the competition with 5th place in the cost event

## FORMULA BHARAT (NATIONAL COMPETITION)

- In 2017, the team took the FMX6 and secured an overall 9th in the competition finishing 3rd in Design and 4th in Cost events.
- 2019 saw the FMX8 secure 3rd in the competition scoring 1st position in Acceleration as well as Business Plan. The team also took their first Electric car, FMX8e and secured 2nd in Design Event.
- In 2020, FM20 topped the AutoCross event with the best time of 92.24 seconds. The team also scored 3rd in E.V. Cost event with FM20e. Formula ManiPal also won the "Code Hatchers" and "YourSoftwareStory".

# DESIGN PROCESS

## REVIEW

A complete analysis of last year's performance is done to be cognizant of the strengths and weaknesses of the car and the team.

## CONCEPT

This step involves the decisions on the different goals for the car as a whole and the subsystem-specific goals.

## DESIGN

In the first stage, parts are designed using CAD softwares. It is ensured that all the rules laid down by the FSAE are followed.

## ANALYSIS

The designed part is analyzed for structural and thermal integrity using softwares like ANSYS and star-CCM+.

## DESIGN AND MANUFACTURE

This step determines the manufacturability of the parts that were designed and analyzed during the design phase.

## DESIGN FOR ASSEMBLY

In the final stage, a glitch free assembly is ensured and the geometries are modified accordingly.

## VERIFY

Extensive on-track testing is done to each and every components' ability to reliably sustain the loads.

## COMPETE

Competing with university teams from all over the world as a flag-bearer for our nation with the aim to prove ourselves at the highest level of student motorsport.

# WHY SPONSOR US?



Formula Maniplal is a reputed student project that is always associated with state-of-the-art technology. The team pushes itself every year to live up to that reputation by building a high performance, lightweight and efficient car that pushes the boundaries of engineering. Your support would go a long way in helping us achieve our goals and carry on the legacy of Formula Maniplal.

We at Formula Maniplal strongly urge you to consider sponsoring us as we believe that a partnership between your respected company and our student project would benefit you in the following ways:

## 1) Widespread Publicity:

Formula Maniplal will include your company's logo on the

car, e-newsletter, apparel, brochure, print publications and banners in pits, events and expos we participate in and even on the workshop sponsors wall. We will also provide you with publicity during our events.

## 2) Online Marketing:

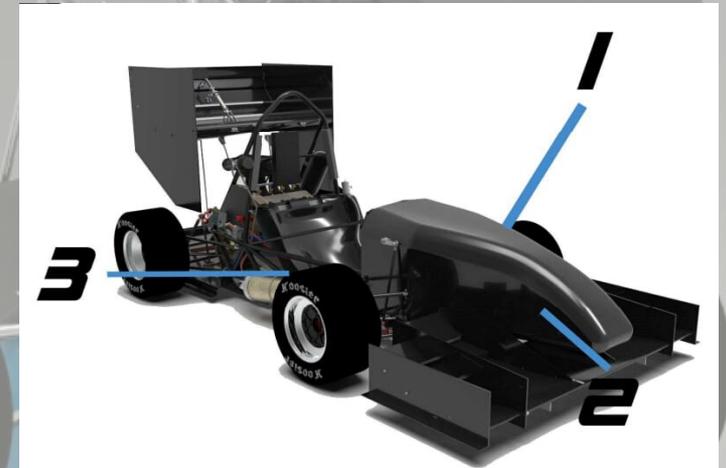
Formula Maniplal will advertise your company's products on our Facebook, Instagram and other social media pages which have a reach of over 20,000 people, promoting the company for marketing and PR purposes. A hyperlink from our team's website to your company's website will also be provided. We will also advertise your company in any other marketing campaign we undertake.

## 3) Exclusive Expo:

Besides the marketing campaign, Formula Maniplal offers, exclusivity to its title sponsor, an opportunity to display FM's car at any exposition of the sponsor's choice. This could go a long way in attracting tons of people to the company's stand where the company can then market its product.

# SPONSORSHIP SLAB

AMOUNT ₹	TITLE [EXCLUSIVE] 7,00,000	PLATINUM 5,00,000	DIAMOND 2,50,000	GOLD 1,00,000	SILVER 60,000	BRONZE 30,000
LOGO SPACE ON THE CAR	XXXL	XXL	XXL	XL	L	M
LOGO POSITION ON THE CAR	AREA 1,2 OR 3	AREA 1,3 OR 3	AREA 2 OR 3	AREA 2 OR 3	AREA 3	AREA 3
LOGO ON THE APPAREL	✓	✓	✓	✓	✓	✓
LOGO ON NEWSLETTERS	✓	✓	✓	✓	✓	✓
LOGO AND LINK ON WEBSITE	✓	✓	✓	✓	✓	✓
LOGO ON HELMET	✓	✓	✓	✓	✓	✓
PRESENTATION /VIDEO AT EXHIBITIONS	✓	✓	✓	✓	✓	
DEDICATED SPONSOR STALL AT EVENTS	✓	✓	✓			
AVAILABILITY OF THE CAR FOR PROMOTIONS	✓	✓				
PAINT THE CAR IN YOUR CORPORATE COLOR	✓					



# OUR LEGACY



**FM08**



**FM09**



**FM-X**



**FMX1**



**E03**



**FMX3**



**FMX4**



**FMX6**



**FMX8**



**FM20**

# MEDIA COVERAGE



# OUR TEAM



# OUR SPONSORS



**MANIPAL**  
ACADEMY of HIGHER EDUCATION

(Deemed to be University under Section 3 of the UGC Act, 1956)

## Platinum Sponsors



## Gold Sponsors



## Other Sponsors



## Monetary Sponsors

