




# teamunwired **Formula Student UK**



Marketing Brochure  
**2012 -2013**



NIT Calicut is pleased to announce the participation of Team Unwired in Formula Student UK, 2013. The event is organized by the Institute of Mechanical Engineers (IMechE) and is held annually at the Silverstone race track, the “Home of British Motor Racing”

Team Unwired is a student club at National Institute of Technology Calicut dedicated to undertaking student engineering projects and competitions. It is a joint venture between Club Unwired- the engineering and technology club of NIT Calicut and SAE India Collegiate Club NIT Calicut- the NIT Calicut chapter of SAE (Society of Automotive Engineers).

Club Unwired has been at the forefront of technical projects at NIT Calicut, with an aim of providing students hands on learning which supplements classroom learning, strengthens fundamentals and cultivates skills that will help the students further their career objectives.

Our current project Formula Student UK 2013 is the most challenging one undertaken and we need all the support and guidance the industry can offer.

Thanking you,

Team Unwired  
NIT Calicut



# Dear Future Partner,



Each year Team Unwired tries to push itself to the limits, broadening their understanding of the engineering subject and bringing NIT Calicut to the forefront by participating in such competitions. In the years 2010 and 2012, they participated in Baja SAE, creating a comfortable niche for them in the nationwide competition. Baja SAE India is a national level event consisting of a similar challenge and mission statement to FS-UK where students build an all-terrain vehicle from scratch.

With the confidence they gained, they intend to compete again in a much more challenging competition series and by choosing to work with them, you will be joining one of the best teams from the Indian sub-continent. Your support will be repaid throughout the year at high profile events such as our appearance at Formula Student UK, and our car unveiling event. You will also gain direct access to our most elite students in the county, giving you the best possible opportunity to seek potential employees.

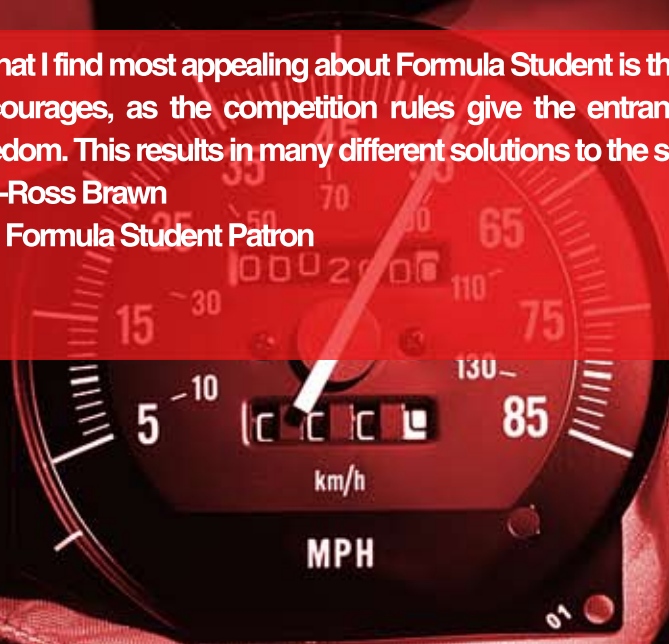
Associating your brand with NIT Calicut's Team Unwired will be useful to both parties and so I request you to consider becoming our partner in both our national and international success.

Best wishes,  
Dr. V Sajith,  
Faculty Advisor,  
Team Unwired, NIT- Calicut  
+91 9446 361 123



**“What I find most appealing about Formula Student is the innovation that it encourages, as the competition rules give the entrants a lot of design freedom. This results in many different solutions to the same issues.”**

**-Ross Brawn  
Formula Student Patron**



# Formula Student UK

(<http://www.formulastudent.com>)

Formula Student UK (FS-UK) is an international competition in which students of undergraduate engineering courses implement what is studied in their curriculum to build a formula style race car. It allows students to gain experience in team work, fund raising, public relations and most importantly design and fabrication.

Formula Student is considered the world's largest student motorsport event and is conducted annually by the Institution of Mechanical Engineers (IMechE). IMechE is an independent engineering society based in London that represents over 100,000 engineers from 139 countries. FS-UK is held at the Silverstone track of UK, the home of the British Grand Prix and which now hosts MotoGP as well.

The competition aims to inspire and develop enterprising and innovative young engineers from around the world. It gives students an opportunity to learn new skills and showcase their talent. In addition to technical skills, the team acquires management, marketing and people skills; vital across all sectors of employment.

Formula Student is divided into static and dynamic events where the car is judged based on the projected sales and costs along with engineering considerations and the performance of the car in track events.

## **STATIC EVENTS**

> **Business Presentation**  
75 points

> **Cost Analysis**  
100 points

> **Engineering Design**  
150 points

## **DYNAMIC EVENTS**

> **Acceleration**  
75 points

> **Skid-Pad**  
50 points

> **Autocross**  
150 points

> **Endurance**  
300 points

> **Fuel Economy**  
100 points



# Team Unwired History at BAJA SAE INDIA

(<http://www.bajasaeindia.org>)



## Baja SAE Asia 2010 Unwind 1.0

- First team to use:
  - Custom made gearbox with inbuilt LSD (Limited Slip Differential)
  - Chromoly as chassis material
  - Third lightest vehicles in BAJA history
- 7th best in design



## Baja SAE India 2012 Unwired 2.0

- 16th overall out of 250 teams
- 3rd in hill climb
- 8th in speed test
- Dronacharya award (Best Faculty in charge)

# Technical Specification

## ENGINE

Type	: 449cc Liquid-cooled DOHC 4-stroke titanium valves; Yamaha YZ450F
Bore Stroke	: 97.0x60.8mm
Compression Ratio	: 12.5:1
Horse Power	: 52.63hp @ 9500RPM
Torque	: 43Nm @ 7200RPM

## TRANSMISSION

Gearbox	: Constant mesh 5-speed; Multiplate wet-clutch
Shifting Mechanism	: Pedal shift



## SUSPENSSION

Type

: Independent Double wishbone; coil over shocks

## TYRES

Type

: 20"x13"-6" Dry/Rain tyres

## BRAKES

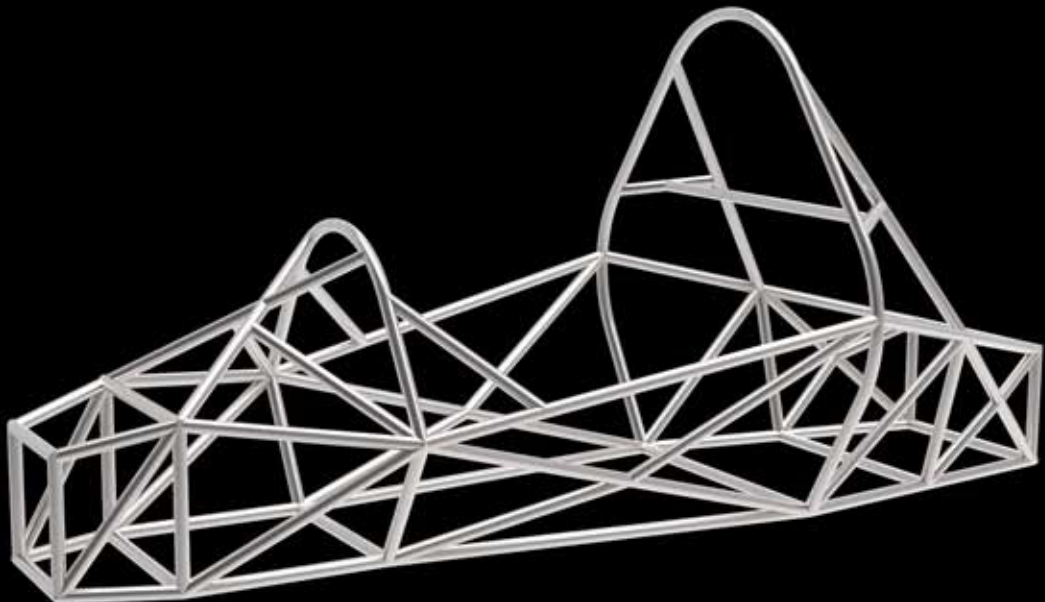
Type

: Disc brakes on four wheels with 'X' configuration

## CHASSIS

Material  
Welding

: AISI 4130 (chromoly)  
: TIG(Tungstun Inert Gas welding)



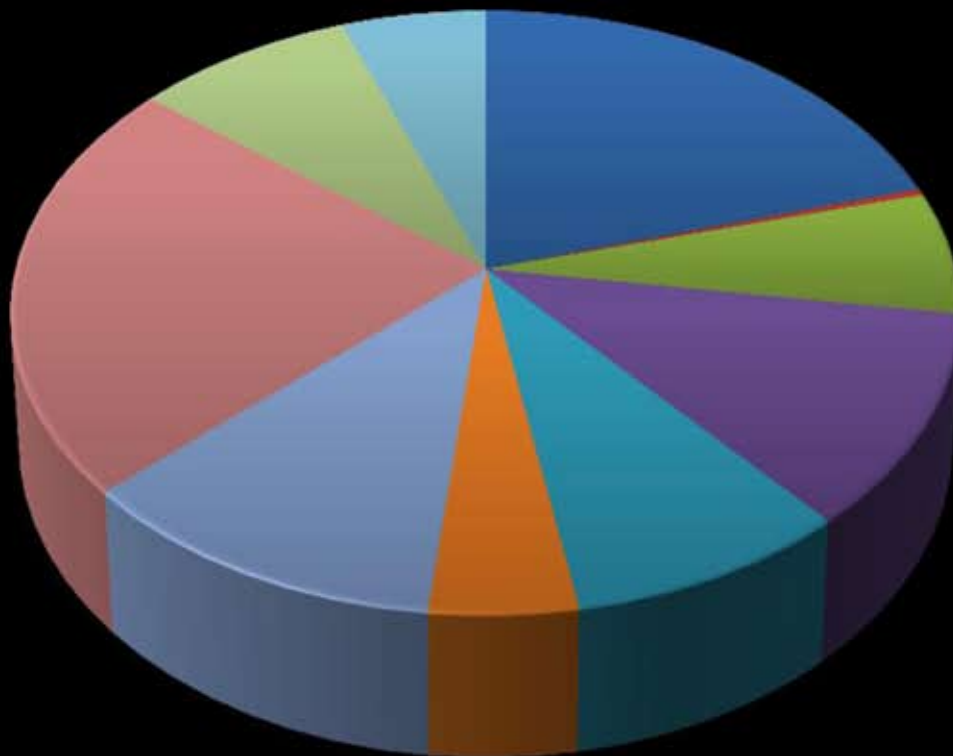


# FSUK Project Budget

• <b>SUSPENSION</b> Tyres, Hubs and upright, Shock absorbers, Control arms	INR	360,000.00
• <b>STEERING</b> Rack and pinion, Steering wheel	INR	6,000.00
• <b>ENGINE</b>	INR	116,000.00
• <b>DRIVE TRAIN</b> Engine, ECU and other electronic components, Chain and sprockets, Differential, Drive axle	INR	200,000.00
• <b>CHASSIS</b> Roll cage material, Impact attenuator	INR	150,000.00
• <b>BRAKES</b> Calipers, Brake disc, Master cylinder, Pedal	INR	78,000.00
• <b>Electronics Hardware</b> Data acquisition: Data logger, Wireless modem, Sensors, Circuitry	INR	100,000.00
• <b>Other Parts</b> Fasteners, Seat, Safety, Battery	INR	200,000.00
• <b>Machining Cost</b> TIG welding, CNC machining of hubs, Links, Other custom parts, Rapid Prototyping	INR	400,000.00
• <b>Shipment of Car</b> Calicut to Silverstone, UK and back	INR	150,000.00
• <b>Travel Expenses</b> Calicut to Silverstone, UK and back for 20 members	INR	10,00,000.00
<b>GRAND TOTAL</b>	<b>INR</b>	<b>27,60,000.00</b>



# Project Budget Brakedown



- Suspension
- Steering
- Engine
- Drive Train
- Chassis
- Brakes
- Other Parts
- Machining
- Shipment of Car
- Travel Expenses
- Electronics Hardware





# Team Structure



Team Leader



Anwer C M  
Head of Fabrication



Anbu shivaram  
Head of Software and Design



Kartik Vasan  
Marketing



Seshan R V  
Head of Testing and Validation



Junaid Ahammed  
Driver

Chassis Fabrication

Custom Parts Fabrication

Assembly

Engine and Transmission

Suspension and Steering

Aerodynamics

Chassis

Brakes

Electronics

Publicity

Accounting

Business Plan

Windtunnel Testing

Engine and Transmission Tuning

Suspension Tuning

Material Testing



# Schedule

[illegible]



# Why Take Part in The Competition?

## For Team Unwired:

Team Unwired always attempts to challenge itself and forge ahead in its endeavors and thus, having participated in national level competitions and having created a comfortable niche for itself, the team intends to participate in what is considered the most challenging undergraduate engineering project. Participation in FS-UK is not just a matter of prestige; participants inevitably acquire greater skills in design, fabrication, and management. Thus participation in FS-UK caters to our every goal.

Through this project, each team member will gain office, industrial and training experience before completing his/her degree, making them industry-ready. A higher order of discipline, management and people skills will be gained over the course of this project in addition to confidence and efficiency.

## For You:

A global event consisting of over 140 teams from different universities will draw an exceptional amount of media coverage and allows for great advertising. Team unwired is the only team participating in the event from Kerala and is one of the very few teams from India. FS-UK is considered the world's largest student motorsport event and provides extensive media coverage through which your advertisement opportunities are numerous.

The company will be supporting a positive educational cause through which the ideas of a group of likeminded diligent students will become a reality. There will be a group of trained and motivated students in an array of areas of expertise ready for recruitment purposes in the near future for the company. A strong link between academia and the industry will thus be created.





# Sponsorship Categories

## Title Sponsor

7,00,000.00 INR\*

- The company that provides the maximum sponsorship for Team Unwired is entitled to the Title sponsorship category and we gratefully propose the following benefits:
- The car will be named after your company. It will be in the format "<your firm's title> Unleashed"
- Largest Logo (40,000 mm<sup>2</sup>) on car nose
- Logo (20,000 mm<sup>2</sup>) on any other two choices of location on car
- Logo (500,000 mm<sup>2</sup>)
  - Team Unwired Workspace entrance
  - Team race pit entrance banner
- Logo (10,000 mm<sup>2</sup>)
  - Team Unwired apparel ie t-shirts, jackets
  - Team Unwired helmet and racing suit
- Logo on posters, website, Paathsaala (A Content sharing repository inside NITC), Twitter, Facebook, YouTube videos.
- Direct hyperlink to your firm's website from our Formula Student website.
- Logo on stalls in our technological festival Tathva and our cultural festival Ragam
- Logo on footer of mail sent out to alumni and newsletters
- Monthly newsletter of Team Unwired progress
- Access to unveiling of the car event
- Car available for corporate events display after the completion of event
- Tax deduction statement
- Records of requested team members for recruitment purposes



# Sponsorship Categories

## Gold Sponsor

5,00,000.00 INR\*

- Large Logo (25,000 mm<sup>2</sup>) on side panels of car
- Logo (8,000 mm<sup>2</sup>) on
  - Team Unwired apparel ie t-shirts and jackets
  - Team Unwired helmet and racing suit
- Logo (250,000 mm<sup>2</sup>)
  - Team Unwired workspace entrance
  - Team race pit entrance banner
- Logo on posters, website, Paathsaala (A Content sharing repository inside NITC), Twitter, Facebook, YouTube videos.
- Direct hyperlink to your firm's website from our Formula Student website.
- Logo on stalls in our technological festival Tathva and our cultural festival Ragam
- Monthly newsletter of Team Unwired progress
- Access to unveiling of the car event
- Car available for corporate events display after the completion of event
- Tax deduction statement
- Records of requested team members for recruitment purposes



## Silver Sponsor

3,00,000.00 INR\*

- Medium sized Logo (20,000 mm<sup>2</sup>) on side panels of car
- Logo (6,000 mm<sup>2</sup>) on Team Unwired apparel ie t-shirts and jackets Team Unwired racing suit
- Logo (100,000 mm<sup>2</sup>)
  - Team Unwired workspace entrance
  - Team race pit entrance banner
- Logo on posters, website, Paathsaala (A Content sharing repository inside NITC), Twitter, Facebook, YouTube videos.
- Direct hyperlink to your firm's website from our Formula Student website.
- Access to unveiling of the car event
- Monthly newsletter of Team Unwired progress
- Tax deduction statement

## Bronze Sponsor

1,00,000.00 INR\*

- Small sized logo (10,000 mm<sup>2</sup>) on side panels of car
- Logo on posters, website, Paathsaala (A Content sharing repository inside NITC), Twitter, Facebook, YouTube videos.
- Direct hyperlink to your firm's website from our Formula Student website.
- Access to unveiling of the car event
- Monthly newsletter of Team Unwired progress
- Tax deduction statement

\* All sponsorships can also be provided as product or service equivalent to the sponsorship category amount availing all the benefits of the particular sponsorship category



# Thank You

Thank you for taking the time to learn more about Team Unwired. Our success during the 2012 season at Baja SAE India would not have been possible without the support of our gratified and enthusiastic partners, and with your support we are sure to make the 2013 season at Formula Student-UK, our very first international event a greater success.





Nobody gonna take my car  
Im gonna race it to the ground  
Nobody gonna beat my car  
Its gonna break the speed of sound  
Oooh its a killing machine  
Its got everything  
Like a driving power big fat tyres  
And everything

I love it and I need it  
I bleed it yeah its a wild hurricane  
Alright hold tight  
Im a highway star...

*"Highway Star", Deep Purple*



# Contact Us

If you are interested in supporting Team Unwired, NIT Calicut  
please feel free to contact any of the following.

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## Address

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KIND ATTN: Dr. V Sajith / Mr. Shijo Thomas

Email: teamunwired@nitc.ac.in

VISIT THE TEAM WEBSITE AT

[www.teamunwired.org](http://www.teamunwired.org)

**FORMULA  
STUDENT**

Institution of  
**MECHANICAL  
ENGINEERS**

