

Racing NEWS

What is Formula Student?

- International student design competition
- Design, build and race single seater Formula 1 style car
- 600cc motor cycle engine with intake restrictor
- Competition judging criteria includes design quality, costing, static and dynamic tests culminating with an endurance race
- Students from a variety of disciplines involved including engineering, marketing, business, IT, finance etc.
- Funding mainly through industry sponsorships
- NMMU plans to compete in an international Formula Student competition.



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NMMU Racing First!



After more than two years of determined effort by a dedicated team of students NMMU Racing became the first South African University team to design, build and race a Formula Student car!

NMMU Racing participated in the Knysna Hillclimb race 22-24 October, as a precursor to the Formula Student Germany competition in August 2011.

We were met with a great deal of enthusiasm by the organisers of the Hillclimb, who provided us with a free entry into the race. The Knysna Hillclimb, was an ideal testing ground for our vehicle, while providing the opportunity of displaying our Formula Student car to the South African

motorsport community.

As the race weekend drew closer, the pace of work escalated to the point where the team worked through many nights resolving component and assembly issues.

Continued overleaf...





Other last-minute challenges included new laser cut brake discs manufactured the day before the race, while the exhaust system, which was hand-built by Graham from Coker Race Products in Cape Town, was personally delivered to the team in Knysna on Saturday morning!

A frame covering was fitted in lieu of a full vehicle body, which was not ready in time, allowing us to display our team and sponsor's logos on the vehicle.

On the Saturday morning of the race, the car was wheeled out into the street for the first test drive, and after starting the engine, the vehicle slowly rolled down the road under its own power for the first time, followed by shouts of excitement and tears of joy and relief!

We arrived at the Hillclimb race full of enthusiasm and after competing registration, had to undergo scrutineering, to check the safety aspects of the vehicle.

Some concerns were raised by the organisers, but they agreed to let us drive the course at a moderate pace.

Our turn eventually arrived and the vehicle burst into life at the starting line, completing the 2km course without incident.

There was a great deal of interest shown in the vehicle by fellow competitors and spectators, who were very impressed with the fact that the car was entirely designed and built by the students themselves.

With many obstacles to overcome, there were times then the team felt overwhelmed by the challenge, but through sheer determination and teamwork, we were able to meet our objective of competing in the Knysna Hillclimb race, thereby becoming the first South African University to successfully design and build a Formula Student racing car!

First Track Test



The NMMU Racing team was recently filmed at the Celso Scribante kart racing track by SABC TV News, who ran a report on the team's achievement in being the first university to build and race a Formula Student car. Hiten Parmar (driving) and Andre Labuschagne had the opportunity of discussing their roles in the project on camera.

Hand-built Exhaust Delivered Just In Time



The team manoeuvres the car into position at the Knysna Hillclimb shortly after fitting the brand new exhaust system hand-built by Graham at Coker Race Products.

Graham at Coker Race Products was instrumental in designing, optimising and building the exhaust system for our Formula Student car.

Working from the vehicle CAD data, the pipe routing was optimised to suit the various engine, suspension and frame components, while providing optimum gas-flow characteristics. As can be seen below, the result was an impressive display of craftsmanship, and to top it all, he drove through to Knysna from Cape Town to personally deliver it to the team!

A hydroforming process was used to create the intricate shapes out of flat sheet metal, and the silencer was built with a titanium outer sleeve, for improved durability and sound quality. As a sponsorship of the team, Grahame offered his time free of charge. NMMU Racing sincerely appreciate your contribution to our team!

Carl's Column

Carl has been in Wolfsburg Germany for the past three months, and has played a significant role in the WOB Racing team, at the Ostfalia University, where he is based.

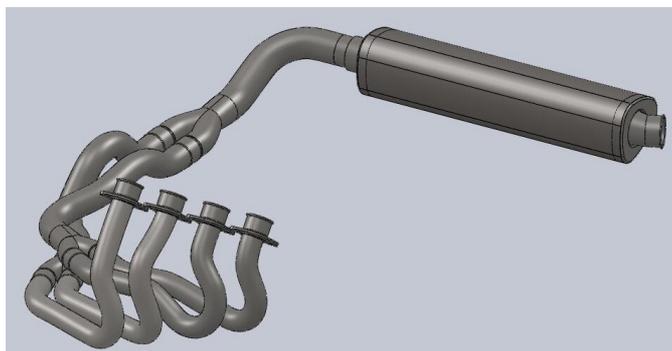
He has been busy designing the 2011 car's drivetrain components, and has also been performing a lot of background research for the team.

In mid November he will be attending a Vehicle Dynamics and Data Acquisition seminar in Cologne, which will assist us in optimizing our vehicle suspension design through effective analysis and testing.

In preparation for the 2011 Formula Student Germany event, he will also be attending a one-day seminar to discuss the 2011 rules changes, and interact with other German teams regarding their experience of this year's race.

I also have it on good authority that he has spent a fair amount of his spare time on a new pair of rollerblades!

We wish him all the best and look forward to him sharing this vital knowledge and experience with the team on his return to South Africa.



Sponsors and Supporters

This project would not have been possible without the generous financial, technical and material support of the companies and organisations listed below.

- **NMMU:** financial support
- **VW Racing:** technical support, materials and racing vehicle components
- **Nelson Mandela Bay Municipality:** financial support
- **AIDC:** financial support
- **Continental Tyres:** racing tyres , driver training

VOLKSWAGEN *Racing*



Automotive Industry Development Centre



- **NRF:** research funding
- **DAAD:** German student exchange funding
- **ZF Sachs:** shock absorbers
- **Profile Tooling:** component machining
- **HiTech Automotive:** component fabrication
- **Disen Engineering:** Machined components
- **SKF Bearings:** vehicle bearings



DISEN ENGINEERING



- **Terry Moss Racing:** technical and racing support from Terry Moss and Michael Stephen, supply of racing helmets
- **Autograph Racing:** Diktator engine ECU
- **Honda Wing Port Elizabeth:** Technical support
- **Coker Race Products:** discounted racing components
- **Esteq Engineering:** CAE / CFD
- **F1 Outdoor Karting:** race track use and driver training



Faculty Advisors:

Trevor Stroud

041-5043565

Trevor.Stroud@nmmu.ac.za

Howard Theunissen

041-5043463

Howard.Theunissen@nmmu.ac.za

Team Leaders:

Technical

Carl van Rooyen (Germany)

Business & Marketing

Peter Johnson

Formula Student Office:

041-504 3658

Mechanical

Alison Richter

Electrical

Andre Labuschagne

Body

Geoff Jones

