

# NMMU Racing NEWS

 Nelson Mandela  
Metropolitan  
University  
for tomorrow  
Port Elizabeth & George

The official publication of the NMMU Racing Formula Student Team

April 2011

## 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 in an endurance race
- Students from a variety of disciplines involved including engineering, marketing, business, IT, finance, PR etc.
- Funding mainly through industry sponsorships
- NMMU plans to compete in an international Formula Student competition.



### Find us online:

[www.nmmu.ac.za/nmmuracing](http://www.nmmu.ac.za/nmmuracing)

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## Sponsors' Day Display



Our NMMU Racing team pose with the car at Sponsors' Day. *Front row:* Andre Labuschagne, Saleem Noorshib, Tauyanashe Nyikadzino, Leewyn Arends, Ernest Strydom *Back Row:* Cara-Lee Scheun, Siphokazi Mdidimba, Yanga Fadana, Trevor Stroud, Simon Adams, Carl van Rooyen, Loyiso Gongqa, Niel Strydom, Delight Chirenje, Stephen Bradshaw, Majeed Ahmed.

On Friday 8 April NMMU Racing hosted a Sponsors' Day at the NMMU Conference Centre on North Campus. The purpose of the event was to introduce current and new sponsors to the team, show them the progress we have made so far, and provide some insight into how it all came together.

Some of the team had the opportunity to present their area of expertise to the sponsors and share some of the experience gained by them personally.

Along with our existing sponsors, which included Volkswagen, Nelson Mandela Bay Municipality, AIDC and Continental Tyres,

some new companies were invited and presented with the opportunity of assisting the team with the challenge of getting to the race in Hockenheim in August.

Many thanks to all who attended and especially those sponsors who demonstrated their support through sponsorship pledges.

  
NMMURACING  
FORMULA STUDENT

# Vehicle Preparation for German Competition

In October last year the team gained valuable experience by attending the Knysna Hillclimb race. Many opportunities for improvement on the vehicle came to light and as a result, the team went back to the drawing board to enhance the design and performance of the car in key areas.

In preparation for the competition in Germany, a number of criteria also have to be met, which were not a requirement in Knysna.

As a result, the following components and systems have been improved:

- Cooling system upgrade (improved routing and fans).
- Fuel and air intake system installed with 20mm restrictor

(new intake manifold and fuel tank manufactured with revised ECU calibration)

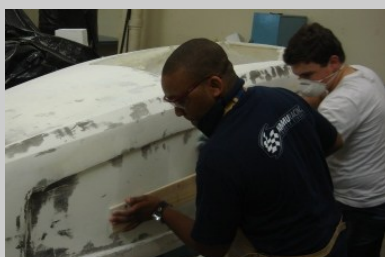
- Completely new bodywork styled and moulded from various composites (side pods to house radiators for improved airflow and cooling).
- Re-designed suspension wishbones with encapsulated spherical bearings on all pivot joints.
- New CAD designed carbon fibre moulded seat.
- Extended firewall and new driver head restraint.
- New dashboard layout integrated into cockpit surround.

These changes have resulted in a vastly improved package which will be put through rigorous tests in the coming weeks to further optimize performance.

## NMMU Racing Student Graduates

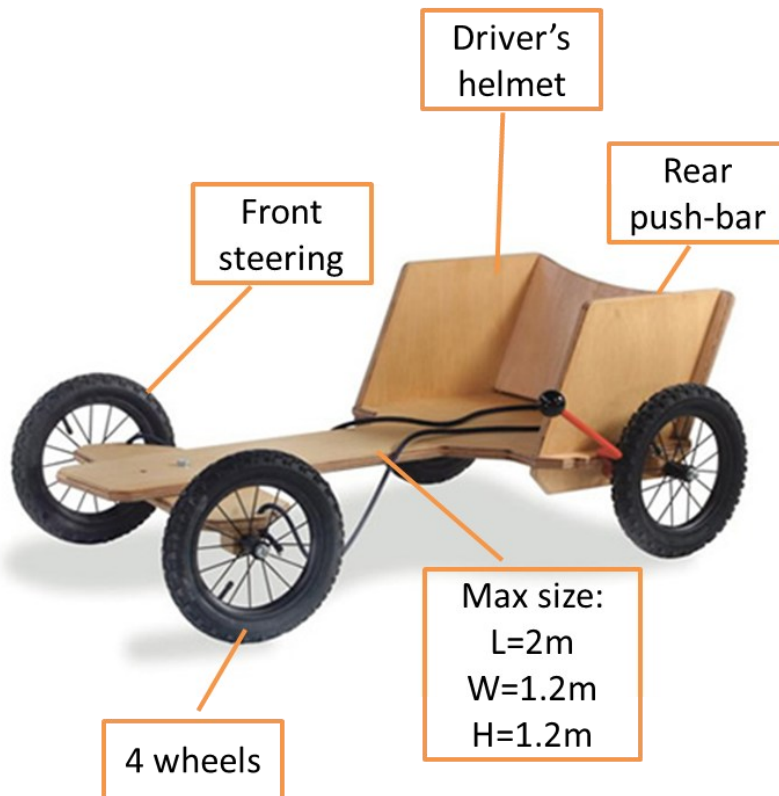


Mphathisi Colwana paid a visit to the NMMU Racing team on the way to his graduation ceremony where he was awarded a National Diploma in Mechanical Engineering. He completed both P1 and P2 in the racing team and was involved in the design and development of the cooling system, suspension and brakes. He is now employed as a Technician at the Department of Water Affairs in Pretoria. Congratulations on your achievement!





# NMMU Racing to Host Fun Boxcar Race



On **28 May** NMMU Racing is hosting the first annual Boxcar Race, where teams of up to six individuals will compete in a relay race with self-built go-karts on a 600m flat track. The event is challenging students, scholars and companies to compete against each other for the overall prize of best boxcar team. This fun event aims to raise funds to support the NMMU Racing team on their way to Germany, while also providing an opportunity to showcase our Formula Student racing car to the broader public.

Also planned for the day are racing car displays, vintage cars and plenty of food and drink in a festive atmosphere!

Time to stretch those legs and clean out the old garage to build a boxcar worthy of this event! For design rules refer to the illustration above.

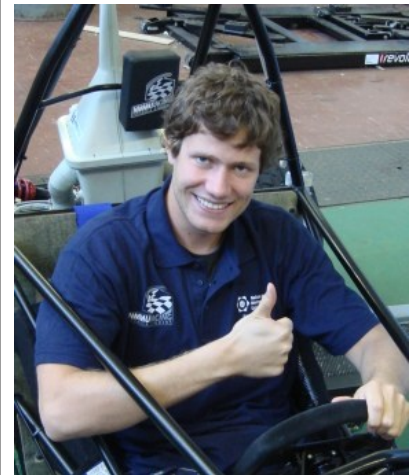
In addition to prizes for the winning scholar, student and corporate team, the judges will also reward creativity and engineering skill.

For more information please call: **Monique 084 532 4997**

Or email: **s209001441@live.nmmu.ac.za**

## Exchange News

Our latest exchange student from Esslingen University in Germany is **Ferdinand Ort**, who will be spending five months with the NMMU Racing team. He is currently doing a study on converting our Formula Student racing car to electric power.



The Formula Student competition in Hockenheim Germany has recently introduced a category for electro-powered vehicles, and Esslingen University has established a team to compete in this competition. Due to our long-standing relationship with Esslingen University, NMMU Racing was approached to assist them in setting up a new team, as well as with an initial study into an electric-powered vehicle.

We hope to build on this cooperation in the future by collaborating on the build of the electric car which could be entered as a joint South African/German initiative at the Hockenheim event.



# 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 support & helmets
- **Autograph Racing:** Diktator engine ECU
- **Honda Wing Port Elizabeth:** Technical support
- **Coker Race Products:** discounted racing components
- **Rezlo Auto Works:** discounted hoses & fittings
- **Graymaur Plastics:** fabrication of air intake system
- **Esteq Engineering:** CAE / CFD



## 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

Business & Marketing

### Peter Johnson

Formula Student Office:

041-504 3658

Co-ordination

### Alison Richter

Electrical

### Andre Labuschagne

Assistant technical team leader

### Saleem Norsheeb

