



Formula Student Germany

| International Design Competition |

Programme

Formula Student Germany 2006
Hockenheim

August 3rd – 6th 2006



| Creating a future for engineers |



We would particularly like to thank
the sponsors of Formula Student Germany 2006 for all their support



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A special thanks goes to the numerous volunteers who contributed significantly in the realisation of the first Formula Student Germany

Greetings

In Germany the automotive industry and engineering in general have great tradition. High time that an internationally successful concept such as Formula Student should be held in Germany – hosted by the Verein Deutscher Ingenieure (VDI), of course.



41 teams from 11 different countries from Russia to Canada and Germany to Australia will be participating at the first Formula Student Germany from the 3rd to the 6th of August 2006. By taking part at this worldwide design competition the students supplement their education with the attractive task of building a race car. This experience is invaluable for their professional careers. Consequently, at this weekend in August more than 600 highly motivated students will be coming to the Hockenheimring to present their prototypes and face the competition from the other teams. The use and gain of engineering knowledge is one of the main issues at Formula Student. However, what should be specially mentioned, is that the participation at Formula Student Germany demands a high level of initiative, motivation and team spirit from the students. Learning these and other soft skills make them interdisciplinary and holistic young engineers.

Dear visitors, in Hockenheim you will experience motor sport from a different angle. Of course, Formula Student Germany is also about pure speed. Yet speed is mainly an indication for the quality of the vehicles that additionally face tests concerning lateral forces, acceleration and stamina.

The teams and their cars are assessed in dynamic and static disciplines – the highlight after 12 months of designing, building and testing. At this point we would like to thank the volunteers, all specialists from industry, economics and science, who joined the Formula Student Germany Team and who will take part in these intense preparations.

We are looking forward to an exciting competition that is defined by fairness and motivation as well as fun and communication. We wish all teams success and a unique experience and all the visitors an exciting insight into the abilities and creativity of the new young engineers from Germany and the rest of the world.

Dr. Ludwig Vollrath (VDI) and the Formula Student Germany Team

VDI-Campus

Studying in the fast lane

All our efforts are channelled towards you: the designers of tomorrow, the future engines of economy. We accompany and support you during your studies and give answers to your questions:

- > Which course is the right one for me?
- > What practical experience do I need?
- > How can I study effectively?
- > What degree should I take?
- > Where and how do I apply correctly?

Become a member and benefit from information and consultation: as the largest technical-scientific organisation in Germany, the VDI doesn't only help you concerning education but also represents your interests and wishes.

At www.vdi-campus.de you can receive information and useful tips concerning studies, jobs and careers.

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Good reasons for supporting Formula Student Germany



We at BMW Group are of the opinion that the Formula Student contributes exceedingly to the students' interdisciplinary work and entrepreneurial thinking. The commitment of the students indicates: Here is someone who is serious about motorsports.

BMW Group



ThyssenKrupp

Formula Student Germany is practical training uniquely packaged in a fascinating contest. Sparking real enthusiasm in contestants and others, it motivates all involved to reach for new heights. So it fits in perfectly with the world of ThyssenKrupp.

ThyssenKrupp

MAHLE

'Formula Student Germany' provides young people with the opportunity to develop technical and economic skills as key success factors for a professional career in car manufacturing and supplier industry. The program enables all students to gain important practical experience in fields such as international cooperation as well as interdisciplinary teamwork. All these skills are considered indispensable in a global economy and are of great significance for an international automotive supplier company like MAHLE.

We wish all teams good luck!

Michael Glowatzki, Corporate Executive Vice President Human Resources, MAHLE GmbH

DEKRA

With more than 80 years of automotive experience, DEKRA is working towards providing more safety and quality at the interface between man, technology, the environment and mobility. As FSG 2006 partner DEKRA fosters its university contacts and encourages young people to take an active interest in mobility.

DEKRA



Continental Telematics supports the Formula Student mainly for two reasons: We want to promote committed students and their activities. Furthermore we want to win high potentials for Continental's successful future.

Elmar Mueller, EMEA Telematics Business Director for Continental Automotive Systems



BOSCH
Technik fürs Leben

After more than 100 years of developing new automotive technology we at Bosch know the importance of young talent for the future of mobility. Formula Student is an ideal platform for students to showcase their abilities by solving a realistic task. This competition makes everyone involved a winner.

Bosch



Formula Student is an excellent opportunity for ambitious students to prove their engineering skills in a genuine engineering project and transfer their knowledge about SolidWorks' 3D CAD products into a project that prepares them for their professional life. Therefore we support individual teams and Formula Student Germany as an organisation.

Lutz Bettels, Business Manager Education Europe, SolidWorks Europe



TÜV SÜD Automotive is a service provider for R&D and neutral partner for product improvement and process management within automotive industry. FSG is a exceptional platform to contact young engineers with professional competence as well as management competence. That is the reason for our support in FSG.

TÜV SÜD

Schedule

Wednesday, 2nd of August 2006

3:00 pm	Arrival of the teams
8:00 pm	Inline-Skating on the ring

Thursday, 3rd of August 2006

8:00 am	Team Welcome & Team Briefing ③
9:00 am – 6:00 pm	Scrutineering (Check of rules and safety conformity ⑨, tilt table ⑩ and break test ⑪)
9:00 am – 6:00 pm	Style Event ⑥
8:00 pm – 9:00 pm	Reception for Faculty Advisors, Team Captains & Judges ③

Friday, 4th of August 2006

8:00 am	Team Briefing ③
9:00 am – 6:00 pm	Design Event ⑥
9:00 am – 6:00 pm	Cost Event ⑥
9:00 am – 6:00 pm	Presentation Event ⑦
9:00 am – 6:00 pm	Scrutineering ⑨
9:00 am – 6:00 pm	Test Tracks open ⑬
11:00 am	Press Conference ③
7:00 pm	Presentation Finals ③
8:00 pm	Awards Ceremony – Part I ③: Style Event, Presentation Event, Cost Event

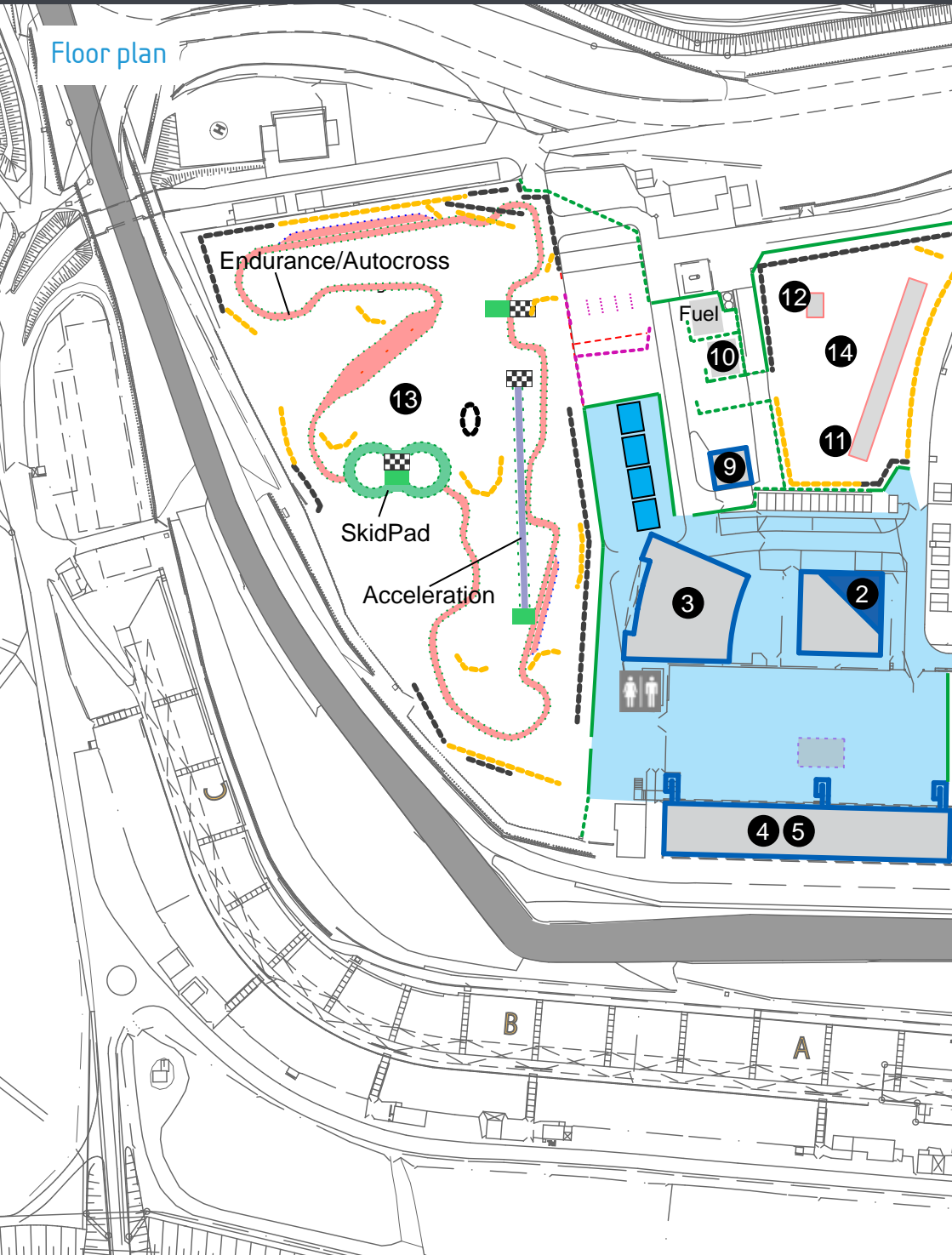
Saturday, 5th of August 2005

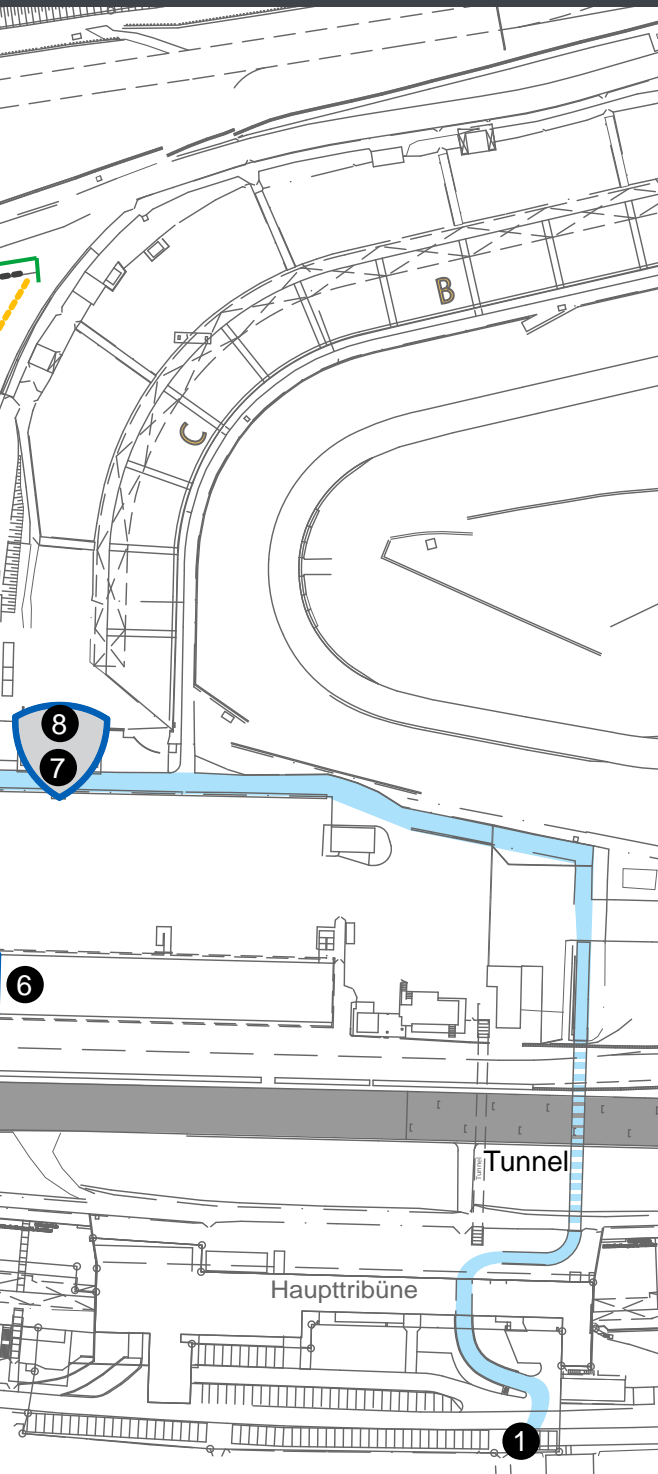
8:00 am	Team Briefing
9:00 am – 1:00 pm	Skid Pad and Acceleration ⑬
2:30 pm – 7:00 pm	Autocross ⑬
7:30 pm	Design Finals ③

Sunday, 6th of August 2006

8:00 am	Team Briefing ③
9:00 am – 5:00 pm	Endurance ⑬
6:30 pm – 8:00 pm	Design Review
8:00 pm	Awards Ceremony – Part II ③
9:00 pm	MAHLE-Party ⑤

Floor plan





- Visitor's Area
- Tribunes
- 1 Entry
- 2 Event Control
- 3 FSG Forum
- 4 Pits (ground floor)
- 5 Exhibition, Catering and MAHLE Party (first floor)
- 6 Design Event & Cost Event
- 7 Presentation Event
- 8 DaimlerChrysler Lounge
- 9 Scrutineering
- 10 Tilt table
- 11 Brake test
- 12 Noise test
- 13 Dynamic Area:
Test track (4th of August)
Acceleration (5th of August)
Skid Pad (5th of August)
Autocross (5th of August)
Endurance (6th of August)
- 14 Test track (5th and 6th of August)

Success = Knowledge^{Passion}



Make a change as Engineer.

As time moves on, different ideas and concepts loose value or gain importance. What took past generations years to achieve, is now done within the blink of an eye. The concept of speed and mobility is becoming increasingly important in today's world. Join us, if it thrills you to speed the process and make a move on your career.

We need your knowledge and passion to keep us moving towards new ideas for the future. You will have many chances to contribute and learn, either as an **intern**, a **university student** or by writing your **thesis paper** at BMW Group. Do these possibilities arouse your interest? Then it is time we meet.

Please apply online! With our online application system we will meet each other sooner. All necessary information can be found at **www.bmwgroup.jobs**.

BMW Group



Disciplines

Static disciplines

Design Report: The students explain their constructive solutions to a jury of experts from the automotive industry and its subcontractors in report and discussion.

Cost Report: The students are to assume that a serial production of 1000 cars a year will follow the prototype. The cost calculation is discussed with a jury based on a report.

Presentation: In a business presentation the students present their business plan to a jury which is assumed to plan a serial production.

Dynamic disciplines

Acceleration: The race cars prove their accelerating abilities over a distance of 75 meters. The fastest need less than 4 seconds.

Autocross: The monoposti drive on a course of 650m through straights and curves. The lap time serves as indicator for driving dynamics and handling qualities. The results of the Autocross discipline determine the starting order of the Endurance.

Skid Pad: On this parcours in shape of an 8 the cars demonstrate how good lateral forces can be absorbed (up to 1.4g). The faster the lap time, the better the car.

Endurance: Over a distance of 22 kilometers the cars have to prove their durability under long-term conditions. Acceleration, speed, handling, dynamics, fuel economy, reliability - the cars have to prove it all.

Awards

Static Events	Dynamic Events	Awards
Design (1 st to 3 rd) Cost Event (1 st to 3 rd) Business Plan (1 st to 3 rd)	Best Endurance Best Acceleration Best SkidPad Best Autocross Best Fuel Economy	Winner Over All Best Dynamic Best Newcomer Best Style Most Innovative Use of Electronics Most Innovative Chassis Design



MAHLE

Driven by performance

MAHLE HAS ALWAYS BEEN THERE FOR THE PROS ...

**BUT DID YOU KNOW MAHLE
IS ALSO THERE FOR THE
ROOKIES?**

The basis of success is talent ... and a sound education. And that is why we like to invest in people. Whether it's in the Formula Student or on site at our company. The future generation learns the know-how necessary for the tasks of tomorrow. More information: www.jobs.mahle.com.



Participating teams at a glance

Car no.	University	City	Country	Pit no.	Page
1	Technical University Graz	Graz	Austria	1	37
3	Helsinki Polytechnic	Helsinki	Finland	12	41
4	University of Applied Sciences Stralsund	Stralsund	Germany	13	56
8	Technical University of Braunschweig	Braunschweig	Germany	30	24
9	University of Applied Sciences Amberg-Weiden	Amberg	Germany	2	17
10	University of Applied Sciences Graz	Graz	Austria	8	39
11	University of Bayreuth	Bayreuth	Germany	9	19
12	University of Strathclyde	Glasgow	United Kingdom	17	36
13	University of Applied Sciences München	München	Germany	36	51
14	Darmstadt University of Technology	Darmstadt	Germany	11	28
15	University of Applied Sciences Konstanz	Konstanz	Germany	37	43
16	University of Applied Sciences Offenburg	Offenburg	Germany	31	52
17	University of Applied Sciences Ulm	Ulm	Germany	32	61
19	University of Applied Sciences Berlin	Berlin	Germany	10	23
24	Deakin University	Geelong	Australia	20	35
25	Ravensburg University of Cooperative Education	Friedrichshafen	Germany	15	34
29	University of Stuttgart	Stuttgart	Germany	38	58
31	Technical University of Munich	München	Germany	25	49
33	University of Applied Sciences Braunschweig-Wolfenbüttel	Wolfsburg	Germany	4	63
37	Delft University of Technology	Delft	Netherlands	35	29
41	Cardiff University	Cardiff	United Kingdom	18	27
42	RWTH Aachen University	Aachen	Germany	23	16
44	University of Applied Sciences Diepholz	Diepholz	Germany	16	30
47	University of Auckland	Auckland	New Zealand	29	18
53	University of Applied Sciences Kiel	Kiel	Germany	26	42
56	University of Windsor	Windsor	Canada	6	62
60	Loughborough University	Loughborough	United Kingdom	33	46
63	University Of New South Wales	Sydney	Australia	22	60
66	Technical University of Berlin	Berlin	Germany	3	22
69	Hamburg University of Applied Sciences	Hamburg	Germany	27	40
71	University of Queensland	Brisbane	Australia	19	25
73	Oxford Brookes University	Oxford	United Kingdom	40	54
75	MADI (STU)	Moscow	Russia	28	48
88	Swansea University	Swansea	United Kingdom	34	59
99	Monash University	Melbourne	Australia	24	47
111	University of Dortmund	Dortmund	Germany	21	32
128	Lancaster University	Lancaster	United Kingdom	7	44
131	KTH Royal Institute of Technology	Stockholm	Sweden	5	55
135	University of Ulster	Belfast	United Kingdom	39	20
911	University of Applied Sciences Dortmund	Dortmund	Germany	14	31

Aachen

RWTH Aachen University, Germany

Car 42

FRAME CONSTRUCTION Monocoque with tubular steel roll bars / tubular steel rear frame

MATERIAL CRP sandwich with Saertex HTA-DU cloth / aircraft-spec epoxy resins cover laminate and Rohacell IG31 core foam

OVERALL LENGTH / WIDTH / HEIGHT (mm) 3150 / 1450 / 1080

WHEELBASE (mm) 1758

TRACK (Fr / Rr) (mm) 1250 / 1180

WEIGHT WITH 68kg DRIVER (Fr / Rr) 143 / 254

FRONT SUSPENSION Double unequal length A-Arm. Pull rod actuated vertically oriented spring and damper

REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper

TYRES (Fr / Rr) 19.5x7.0-13 LeCont soft / 19.5x9.0-13 LeCont soft

WHEELS (Fr / Rr) 6 inch wide, 3 pc Al Rim, no offset / 8 inch wide, 3 pc Al Rim, -13 mm offset

ENGINE MAHLE/ FSAE Engine

BORE / STROKE / CYLINDERS / DISPLACEMENT 70.8mm / 51.5mm / 3 cylinder / 609cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Student des/built, fuel injection, sequential

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 9500

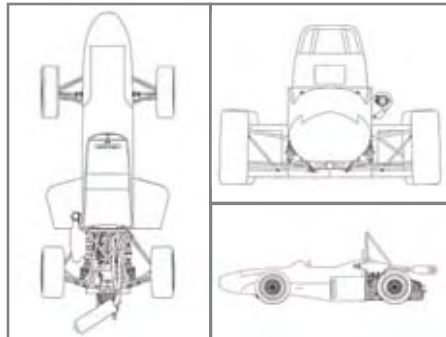
MAX TORQUE DESIGN (rpm) 7000

DRIVE TYPE Cone-ring CVT

DIFFERENTIAL GKN Visco Loc limited slip

COOLING One side pod mounted radiator with thermostatic controlled electric fan

BRAKE SYSTEM 4-Disk system, self developed rotors with 240mm diameter, adjustable brake balance, mono-bloc calipers



Ecurie Aix, the Formula Student Team at the RWTH Aachen, consists of roughly 30 students. The team's first participation in the Formula Student Events dates back to the year 2002 with our first race car EAC01.

After gaining first experiences in this competition the concept for the second car EAC02 was drastically changed. The main changes were a carbon-fibre monocoque, a three-cylinder in-line engine especially build for Formula Student by MAHLE and a self-designed cone-ring CVT. A lot of time was spent on the development and implementation of these innovative components into the second car which participated at the Detroit and Bruntingthorpe events in 2004.

The EAC03 is an improved version of the EAC02 in to which 2 years of development have been invested. A lighter version of the monocoque was constructed and crash tests were used to confirm the safety standards. To ensure the reliability and to decrease the weight of our sophisticated drive train, it was subjected to further development.

Amberg

University of Applied Sciences Amberg-Weiden, Germany



The Running-Snail racing team was established in August 2004. For the coming racing season there are 40 high motivated students from the several departments of the University getting involved with our project. The intention of the Running-Snail team is to construct and build an improved race car and to participate in international competitions.

Our achievements in the last years: Best Newcomer 2005 (Formula Student England), 3rd place at the slalom race (Bayreuth) and 4th place at Formula ATA (Italy) and 2nd place at the "Pursuit Competition".

The experiences, which we made during constructions and races with the RS05-FZS, we naturally tried to introduce in construction and building of the new RS06-FZS. Concluding to that, we made several radical changes to the RS06-FZS. The main intention was to build a lighter and trustier car. We changed the following improvements at the new car: reduction in weight, higher engine power, better cooling and telemetric system for data transfer. With these upgrades, the team is looking for a still better position in England, Germany and in Italy.

Car 9

FRAME CONSTRUCTION Steel spaceframe with different diamertertubes

MATERIAL H 1.0570

OVERALL LENGTH / WIDTH / HEIGHT (mm) 3110 / 1390 / 1100

WHEELBASE (mm) 1600

TRACK (Fr & Rr) (mm) 1200

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 165.5 / 157.7

FRONT SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper

REAR SUSPENSION Double unequal length A-Arm. Direct acting spring and damper

TYRES (Fr & Rr) 7.0 / 20x13 diagonal ply tire/slick

WHEELS (Fr & Rr) 6 inches wide, 10mm offset

ENGINE 1998 Yamaha FZS 600

BORE / STROKE / CYLINDERS / DISPLACEMENT 62mm / 49.6mm / 4 cylinder / 599cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Student des/built, fuel injection, sequential

FUEL 98 - 100 octane unleaded gasoline

MAX POWER DESIGN (rpm) 12000

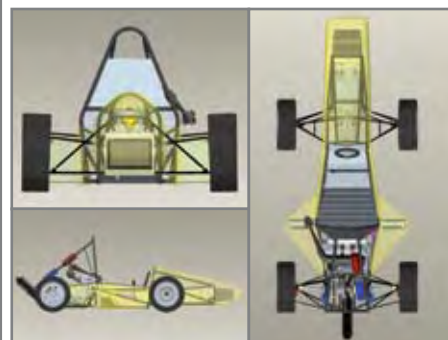
MAX TORQUE DESIGN (rpm) 7000

DRIVE TYPE Chain

DIFFERENTIAL Limited slip differential (torque modulated)

COOLING Twin side pod mounted radiators, twin electronic pumps

BRAKE SYSTEM 3-Disk system, front 2x 220 mm diameter, rear 170mm diameter diff mounted, balance bar, self build master cylinder



Auckland

University of Auckland, New Zealand

Car 47

FRAME CONSTRUCTION Vacuum resin infused carbon fibre monocoque w/foam core. MS roll hoops

MATERIAL Carbon Fibre, Corecell SAN foam core, Mild steel

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2754 / 1316 / 1060 (825 rear wing)

WHEELBASE (mm) 1525

TRACK (Fr / Rr) (mm) 1100 / 1050

WEIGHT WITH 68kg DRIVER (Fr / Rr) 129 / 179

FRONT & REAR SUSPENSION Unequal length A-Arms. Pull rod actuated spring/damper unit

TYRES (Fr / Rr) 20x7-13 R25A Hoosier / 235x50 R13, Hoosier R25A

WHEELS (Fr / Rr) Custom spun aluminium 13"x7" -2" offset / Custom spun aluminium 13"x10" -3"

ENGINE 2004 Yamaha YZF R-6

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 600cc

COMPRESSION RATIO 12.4:1

FUEL SYSTEM Autronic SM4 ECU sequential fuel injection

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 9500

MAX TORQUE DESIGN (rpm) 9000

DRIVE TYPE 12.7mm pitch duplex chain

DIFFERENTIAL Yamaha ATV clutch pack. Custom aluminium housing

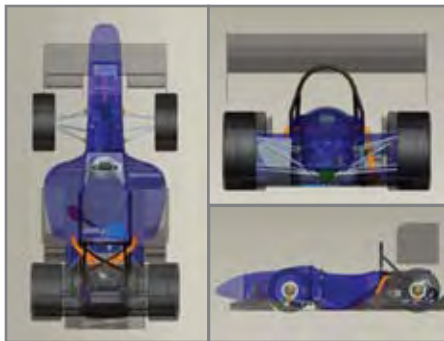
COOLING Single side pod mounted radiator, thermostatically controlled electric fan and electric water pump

BRAKE SYSTEM 4-Disk system, floating rotors with 200 mm diameter, brake balance adjustable, calipers are integrated into the uprights



The University of Auckland team proudly sports the original Bruce McLaren Motor Racing crest on the nose of our car. In sporting this crest, particular inspiration is drawn from the golden era of New Zealand motorsport when Kiwis took on the world and succeeded. The majority of the 24 member strong team is comprised of mechanical, mechatronics and electrical engineering undergraduate and postgraduate students. Our team was founded in 2004 and competed in that same year at FSAE-Australasia becoming the first New Zealand entry into a Formula SAE event and in doing so achieved 6th place as well as being awarded the FISITA Best Endeavour award.

In undertaking the considerable voyage to the German event the team is excited at the prospect of displaying our unique approach, especially in design and the technology which we have implemented. We hope to be very competitive and walk away with the knowledge that we have established the University of Auckland as a world class Formula SAE team.



Bayreuth

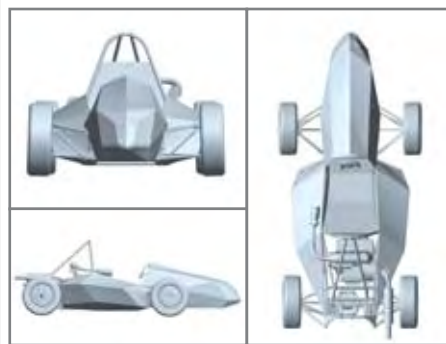
University of Bayreuth, Germany



In spring 2004 a small group of engineering students at University of Bayreuth's youngest faculty founded Elephant Racing. The name is derived from the Faculty of Applied Sciences' abbreviation FAN which shares its letter string with the clever and powerful animal. In December 2005, 18 months of development and manufacturing had been done, presenting the FR5-S1 as a result and being followed by a period of testing and optimizing the car. One major philosophy the team took as a basis was to get the balance right amongst extremes like „100% CAD“ in contrast to „Take an engine and build a car around“ or „Lightness at any price“. – In conclusion to this, the mixture of properties Elephant Racing forced for their first car was: create a rock-solid base to get started with (chassis, drivetrain), add state-of-the-art technology and materials where it makes sense (CANbus, Powershifting, CFRP) and with regard to the idea of designing a product which is sold later on: enable individuality (Ergonomics, optical design, engine management tunability).

Car 11

FRAME CONSTRUCTION Tubular space frame
MATERIAL S355N steel, round tubing 16mm to 25mm dia/ 1mm thk Al sheet
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3180 / 1515 / 1060
WHEELBASE (mm) 1750
TRACK (Fr / Rr) (mm) 1325 / 1225
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 176 / 172
FRONT SUSPENSION Double unequal length A-arms with pull rods actuated to vertically oriented shocks
REAR SUSPENSION Double unequal length A-arms with push rods actuated to horizontally oriented shocks
TYRES (Fr & Rr) 16x53x13 radial slick, Michelin compound FR 2.0
WHEELS (Fr / Rr) Compomotive CX-R 6.5x13, 0mm offset, 1 pc Al Rim
ENGINE 2000 Honda CBR 600 F
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student des/built, fuel injection, sequential
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 9500
MAX TORQUE DESIGN (rpm) 8000
DRIVE TYPE DID 3/8"-525 roller chain, 68 links
DIFFERENTIAL Torsen, 2.6 torsen bias ratio
COOLING Twin side pod mounted radiators with thermo-static controlled electric fans
BRAKE SYSTEM 3-Disk system, semi floating rotors with 230/220 mm diameter, brake balance adjustable, dual piston calipers



Belfast

University of Ulster, United Kingdom

Car 135

FRAME CONSTRUCTION Mild steel tubular space frame / aluminium rear subframe

MATERIAL Steel

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2750 / 1470 / 1340

WHEELBASE (mm) 1725

TRACK (Fr / Rr) (mm) 1290 / 1240

WEIGHT WITH with 68kg DRIVER 220

FRONT & REAR SUSPENSION Double unequal length A-Arm. Pullrod actuated vertically mounted coilover damper

TYRES (Fr & Rr) 7.2/20.0-13

WHEELS (Fr & Rr) 7x13 custom 3 piece alloy

ENGINE 2002 Yamaha YZF-R6

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 599cc

COMPRESSION RATIO 12.4:1

FUEL SYSTEM Student des/built, multi point fuel injection

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 12000

MAX TORQUE DESIGN (rpm) 8000

DRIVE TYPE Single chain

DIFFERENTIAL Quaife ATB Limited slip

COOLING Single side pod mounted radiator with thermostatic controlled electric fan

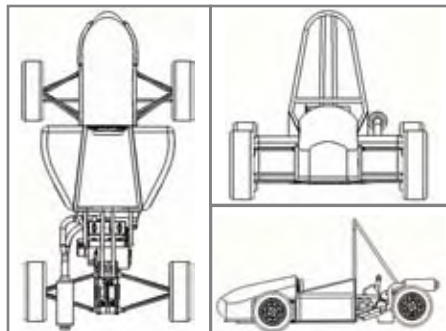
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 265 / 240 mm diameter, twin pot callipers, brake balance adjustable



This year's entry has been designed by four final year engineering students, and manufactured within the University of Ulster. The aim of this year's car was to create a design that was efficient to manufacture, assemble and maintain, whilst also maximising performance and building on our Shell prize for most fuel efficient car at FS 2005.

The suspension geometry of the 2006 vehicle compared to previous designs since our first entry in 2001 features a reduced wheelbase to 1725mm to increase manoeuvrability. The aim of the suspension system was to create a design that could be quickly tuned to suit driver preference. For accurate camber adjustments compact spherical bearings are pressed into ends of the suspension arms, removing the need for rod ends.

This year's entry has been rolling road tuned to 67 BHP (50kW) @ 10559 RPM, and develops 35 lb/ft (47Nm) torque @ 10149 RPM to maximise the potential from the Yamaha YZF R6 power unit, whilst adhering to the restrictions in the FSAE rules.



Future. What's the future?

>> My dad making super ships even better.
That's the future.<< Keanu Engelskirchen, Hamburg

Keanu's father and his colleagues are making sure that the world stays mobile.

From yachts to ocean liners. Jürgen Engelskirchen and the ThyssenKrupp team design and modernize ships. They recently had the world's largest passenger ship in dry dock. The Queen Mary 2 was serviced, overhauled and modernized in record time.

Full steam ahead!



Developing the future.

ThyssenKrupp



Berlin

Technical University of Berlin, Germany

Car 66

FRAME CONSTRUCTION Round and square tubular steel space frame

MATERIAL St-37 and St-52 2.5mm

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2950 / 1500 / 1200

WHEELBASE (mm) 1750

TRACK (Fr / Rr) (mm) 1400 / 1300

WEIGHT WITH 68kg DRIVER (Fr / Rr) 140 / 208

FRONT SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper

REAR SUSPENSION Double unequal length A-Arm. Direct acting spring and damper

TYRES (Fr & Rr) 20x7.5-13 R25A Hoosier

WHEELS (Fr & Rr) 6" wide, pc AL Rim, 0.42" neg. offset

ENGINE 2001 Honda CBR 600F PC35

BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Modified standard fuel injection

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 10500

MAX TORQUE DESIGN (rpm) 10500

DRIVE TYPE Honda original chain, cut to half its length

DIFFERENTIAL Torsen University Special 012000, 3.0 bias ratio

COOLING Radiator with thermostatic controlled electric fans

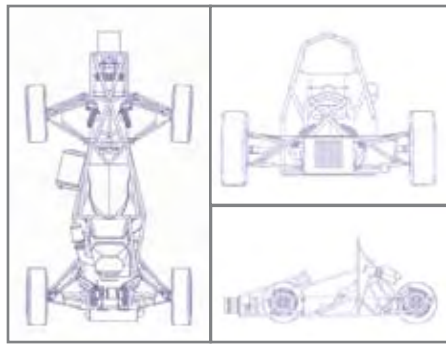
BRAKE SYSTEM 4-Disk system, floating rotors with 265 mm diameter, dual piston callipers, brake balance adjustable



The „Formula Student Team of the Technical University of Berlin“, „FaSTTUBe“ in short, participates for the first time ever in a Formula Student event. Members studying automotive, electrical, mechanical and industrial engineering with business studies represent Germany's biggest technical university at the Hockenheim Ring.

FaSTTUBe was founded in 2005 as a very small group of students, interested in more than everyday's university's curriculum. Over the past 16 months the team grew to a stable and effective 22 members and established all the bases it needed to develop and manufacture its own formula student race car. All obstacles and difficulties in building up this confident new team were overcome.

Our definite goal is to enter this year's competition with our car – the FT2006 – fully in compliance to the rules, participate in every event, getting back to Berlin with a satisfying racer and a load of information to incorporate into our next year's model... the FT2007.



Berlin

University of Applied Sciences Berlin, Germany



The Formula Student racing team of the Berlin University of Applied Sciences was founded no more than one year ago in June 2005. In this short space of time all team members pursued one ultimate ambition: the participation in the Formula Student championship at Hockenheimring in August 2006.

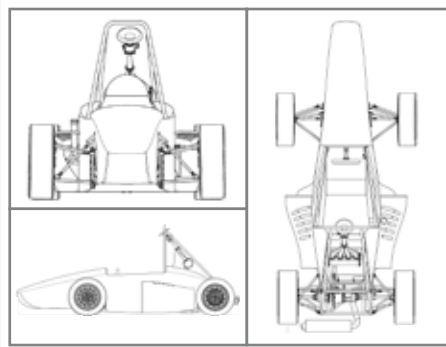
Starting from scratch, all departments like engine/electronics, chassis/brakes, frame/covering and of course the marketing and PR department which amongst others is responsible for sponsoring, aimed high. The result of this year of full commitment is a vehicle, which is highly competitive: The "Berlin Race Car" (BRC '06).

The Team is made up of members with different academic backgrounds. There are automotive, mechanical and industrial engineers as well as computer scientists and business communication students.

The common purpose for this first championship is to demonstrate the competitiveness of BRC '06 and the whole FHTW Motorsport Team as an ambitious rookie in the Formula Student.

Car 19

FRAME CONSTRUCTION Steel tube space frame
MATERIAL S355 J2G3 (1.0570/EN10025) mild steel tube
 - cold drawn seamless, 20mm to 25mm dia
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3050 / 1380 / 1240
WHEELBASE (mm) 1750
TRACK (Fr / Rr) (mm) 1200 / 1145
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 144 / 216
FRONT & REAR SUSPENSION Unequal length A-Arms. Push rod actuated Fox DHX 5.0 damper/spring units
TYRES (Fr / Rr) Hoosier 6"x13" - R25A / Hoosier 7"x13" - R25A
WHEELS (Fr / Rr) BBS 13"x152mm -10.8mm offset / BBS 13"x177mm - 2.6mm offset
ENGINE Suzuki/GSX-R600
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12.5:1
FUEL SYSTEM Suzuki fuel injection, sequential
FUEL 84-100 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10000
MAX TORQUE DESIGN (rpm) 8000
DRIVE TYPE Chain drive, 520
DIFFERENTIAL Torsen limited slip differential, 5200 Nm of sprocket (or ring gear) torque, 3:1 bias ratio
COOLING Twin side pod mounted radiators with thermo-static controlled electric fans
BRAKE SYSTEM 4-disk system, floating rotos with 230 / 220 mm diameter, driver adjustable brake balance

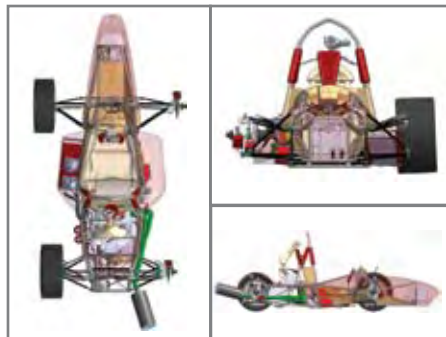


Braunschweig

Technical University of Braunschweig, Germany

Car 8

FRAME CONSTRUCTION Tubular space frame
MATERIAL Alloy steel (1.7734.5) round tubing .039" to .98" dia
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3023 / 1473 / 1085
WHEELBASE (mm) 1600
TRACK (Fr / Rr) (mm) 1245 / 1092
WEIGHT WITH 68kg DRIVER (Fr / Rr) 138 / 150
FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper
TYRES (Fr / Rr) 185x51 R13, Hoosier R25A / 203x47 R13, Hoosier R25A
WHEELS (Fr / Rr) 6 inch wide, 3 pc Al-MG Rim, 25mm negative offset / 7 inch wide, 3 pc Al-MG Rim, 25mm negative offset
ENGINE 2001 Suzuki GSX-R 600
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12.2:1
FUEL SYSTEM IAV GmbH prototype injection system
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10500
MAX TORQUE DESIGN (rpm) 9500
DRIVE TYPE Chain driven
DIFFERENTIAL Progressive-locking speed-sensing Visco Lok LSD from GKN Driveline
COOLING Single side pod mounted radiator with ECU controlled electric fans
BRAKE SYSTEM 4-Disk system, floating rotors with 230 / 210 mm diameter, brake balance adjustable



The Lions Racing Team has competed in six Formula Student events so far. In the 2004 Formula Student Competition we finished third in the overall standings and won the title "Best European Team".

After the competition in England a generation change took place. Due to the lack of experience the 2005 car was completed very late and couldn't meet the expectations, which arose from the good static results, on the track.

However, the team stuck to the highly rated overall design of the 2005 car and focussed on improving its sub-systems for 2006. As a result the 2006 car is more reliable, lighter and shows quite a few new features as well. Especially in terms of use of electronics the team took a great leap forward. The 2006 car is now featuring a traction control as well as a self-designed data acquisition system, including a GPS tracker and data transfer via WLAN.

The Lions Racing Team is looking forward to an exciting first FSG competition with a promising concept and raised expectations.

Brisbane University of Queensland, Australia



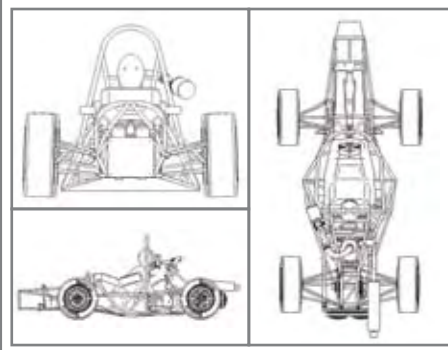
Now in its sixth year, UQ Racing, the University of Queensland's Formula SAE team, consists of over 45 students from a range of disciplines including various engineering disciplines, business and marketing students. We are an enthusiastic and dedicated group and we have great plans for the future.

UQ Racing was established in 2001 and since then has developed into a strong, enthusiastic and successful team. At the 2003 Australasian competition, UQ Racing placed third overall, earning 'Top Australian Team' honors. 2004 saw UQ Racing taking first place in the Acceleration event in Formula Student – UK, and finish in fourth place overall. In 2005, the team managed a personal best with placing second overall, First in Acceleration, second in Endurance, third in Autocross and equal third in Skidpad, giving us a placing in every dynamic event in the Australasian competition.

The UQ Team has worked hard during 2005 to stay on schedule and on budget with the design and construction of the team's new 2005/06 car. The new car has shown blistering performance, winning the acceleration event, placing in every dynamic event and securing 2nd place overall at the Australian Championships in 2005.

Car 71

FRAME CONSTRUCTION Steel tube space frame **MATERIAL** 4130 Chrome Moly tube
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2910 / 1330 / 1075
WHEELBASE (mm) 1575
TRACK (Fr / Rr) (mm) 1170 / 1120
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 138 / 142
FRONT SUSPENSION Unequal length A-Arms. Push rod actuated spring/damper. Drivers adjustable anti-roll bar. ARB contributes 50-220 Nm / deg of roll resistance. Front roll resistance ratio adjustable from 52.5%-61%. Typical dry setting 128 Nm / deg (37% of front roll resistance). Front roll resistance ratio typical dry 57%.
REAR SUSPENSION Unequal length A-Arms. Push rod actuated spring/damper unit.
TYRES (Fr & Rr) 20.7x7-13 Hoosier R25
WHEELS (Fr / Rr) 2 Pce, 7075 Centre 13"x6 3/4"-43mm o/s, Carbon Fibre outer / 2 Pce, 7075 Centre 13"x6"-43mm o/s, Carbon Fibre outer
ENGINE 1998 Honda CBR600 F3, custom dry sump, with integral scavenge pump
CYLINDERS / DISPLACEMENT 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student designed/built fuel injection, sequential
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10000
MAX TORQUE DESIGN (rpm) 9000
DRIVE TYPE Chain # 520
DIFFERENTIAL Spool Diff
COOLING Side pod mounted radiators, with electric fans, and water pumps
BRAKE SYSTEM 3-Disk system, laser cut rotors with 230 / 220 mm diameter, brake balance adjustable, dual piston calipers





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Cardiff

Cardiff University, United Kingdom



Cardiff Racing is entering Formula Student Germany for the first time this year, following four successful years of competition at the UK event. After finishing the 2005 UK event as 2nd UK team and 8th overall, the team has an established knowledge base from which to build the most competitive car to date. The design concept has evolved from last year's car, building on the strengths with none of its weaknesses and we are aiming to score highly in all the events at FSG.

The team consists of students from all engineering disciplines at Cardiff. 3rd and 4th year students are responsible for managing the project and producing designs. However, the project relies heavily on a group of highly committed volunteers to build and race the car. As well as Formula Student Germany, the team has already competed in Formula Student (UK) this year. All students have benefited greatly from their involvement, and we would like to thank Cardiff University and our sponsors for their support this year.

Car 41

FRAME CONSTRUCTION Full sandwich panel monocoque, Fully stressed engine, Water jet cut aluminium rear structure

MATERIAL Monocoque: Hexlite 220 Aluminium honey-comb sandwich panel (0.5mm skins, 19mm core); Rear structure: 2014 T6 8mm aluminum plate

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2850 / 1370 / 1020

WHEELBASE (mm) 1600

TRACK (Fr / Rr) (mm) 1150 / 1100

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 126 / 154 (full wet car weight of 212kg)

FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented coil over spring and damper, adjustable anti-roll bar

TYRES (Fr & Rr) Slick: Goodyear RO65 20x6.5-13; Wet: Goodyear RO65 20x6.5-13

WHEELS (Fr & Rr) 3pc wheel, Al rims 6" wide 1.75" negative offset, team manufactured lightweight aluminium centres

ENGINE 2002 Honda CBR600 F4i

BORE / STROKE / CYLINDERS / DISPLACEMENT 65mm / 45.2mm / 4 cylinder / 599cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Student designed/fuel tank and piping, stock fuel rail and injectors

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 11500

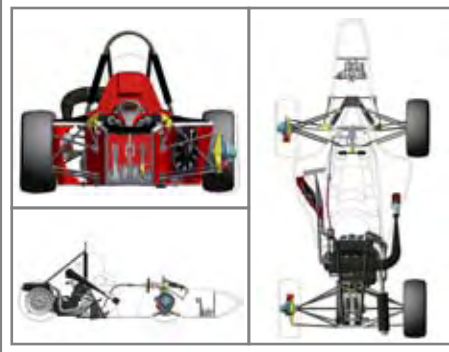
MAX TORQUE DESIGN (rpm) 8500

DRIVE TYPE Chain drive (520)

DIFFERENTIAL Student designed aluminium housing with D.R. Engineering clutch plate LSD internals

COOLING Single side-pod mounted radiator with thermostatic controlled electric fan

BRAKE SYSTEM 4-Disk system, floating rotors with 228 / 215 mm diameter, brake balance adjustable, single piston calipers

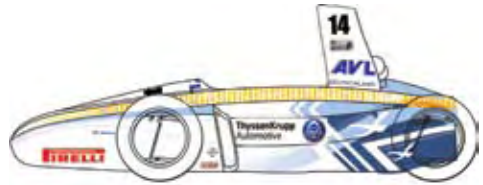
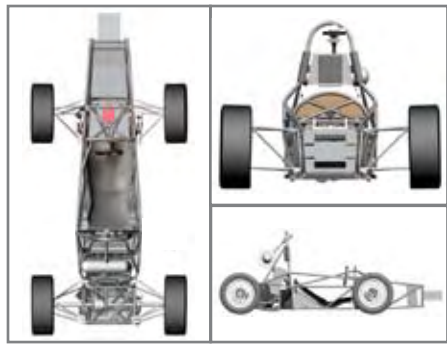


Darmstadt

Darmstadt University of Technology, Germany

Car 14

FRAME CONSTRUCTION Tubular space frame
MATERIAL 1.0037 steel round tubing, 25 to 26.9mm dia/
 AlMg 1.5mm thkl sheet
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2890 / 1423 /
 1065
WHEELBASE (mm) 1685
TRACK (Fr & Rr) (mm) 1218
WEIGHT WITH 68kg DRIVER (Fr / Rr) 154 / 173
FRONT & REAR SUSPENSION Double unequal length
 A-Arm. Pull rod actuated horizontally oriented spring
 and damper
TYRES (Fr & Rr) 180x530 R13, Pirelli
WHEELS (Fr & Rr) 6x13, 3 pc Al Mg Rim
ENGINE 2002 Suzuki GSX 600R
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm /
 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12.2:1
FUEL SYSTEM Student designed and built
FUEL 100 octane unleaded gasoline
MAX POWER DESIGN (rpm) 13500
MAX TORQUE DESIGN (rpm) 10000
DRIVE TYPE Rear wheel
DIFFERENTIAL Quaife QDF7ZR automatic Torque
 Biasing
COOLING 2 (Original Suzuki) coolers in the side pods
BRAKE SYSTEM 4-Disk system, hub mounted rotors
 with 220 mm diameter, quad and dual piston callipers,
 brake balance adjustable



With participating at Hockenheim 2006, the TU Darmstadt Racing Team (TUDART) is entering its first Formula Student/SAE competition ever. As the team came into being in late 2005, it faced the difficulty of developing its very first car within only seven months.

In spite of the huge challenge the team aims to become the best newcomer among the 14 rookie teams. Therefore, the 45 team members spared no efforts. In addition, top-class partners like ThyssenKrupp Automotive, Pirelli, AVL and Opel supported the team, as well as the department of internal combustion engines (VKM, Professor Hohenberg) and the institute of Vehicle Technology (FZD, Professor Winner). As a result, the overall performance data of the car lie within the range of the well established teams, as e.g. the engine power and torque (86 hp / 61 Nm).

Besides the technical demands, the team sets a high value on a professional appearance, as well as on an emotive car design.

More information on <http://www.tudart.de>.

Delft

Delft University of Technology, Netherlands



Already for the sixth time Delft has built a Formula Student Car, the DUT06. In the previous years, the Delft team competed in Formula Student England. The last three years, the team performed exceptionally well in the Design Competition; we won in 2003 and in 2004 and 2005 we were second.

This year's car is based on the experience obtained in the previous years. Although the weight of the car is, like its predecessors, minimized, the team focused heavily on reliability.

The chassis consists of a single piece carbon fibre structure, namely a monocoque with the two sandwich side walls extended to the rear. The engine is the Yamaha WR450F single cylinder powerplant. We have developed all the ancillary systems to fit into the DUT06 theme of performance through lightweight and reliability. The suspension is designed for reliability, a good overall packaging and manufacturability. In addition, one of the major requirements is adjustability, so the car can be tuned to give optimum handling for any track.

Car 37

FRAME CONSTRUCTION Front: thin skin monocoque with aluminium hoops, foam sandwich inserts, sandwich plate bottom and back plate. Rear: Cantilever sandwich beams and steel bulkhead.

MATERIAL Carbon fibre cloth with epoxy resin. Heat treated aluminium 51ST hoops and steel rear bulkhead

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2540 / 1375 / 1075

WHEELBASE (mm) 1540

TRACK (Fr / Rr) (mm) 1200 / 1150

WEIGHT WITH WITH 68kg DRIVER (Fr / Rr) 91 / 107 (full wet car weight of 127kg)

FRONT SUSPENSION Unequal length A-Arms. Push rod actuated Merwede Coil over damper springs/Fox Vanilla RC damper units

REAR SUSPENSION Unequal length A-Arms. Pull rod actuated Merwede Coil over damper springs/Fox Vanilla RC damper units

TYRES (Fr / Rr) 16x6-10 LeCont SuperSoft / 16x7-10 LeCont SuperSoft

WHEELS (Fr / Rr) 2 piece Carbon Fibre Rim/Aluminium centre 10"x6" -27mm offset / 2 piece Carbon Fibre Rim/Aluminium centre 10"x7"-40mm offset

ENGINE 2005 Yamaha WR450F

BORE / STROKE / CYLINDERS / DISPLACEMENT 95mm / 63.4 mm / 1 cylinder / 449cc

COMPRESSION RATIO 12.3:1

FUEL SYSTEM Motec

FUEL Euro 95

MAX POWER DESIGN (rpm) 1000

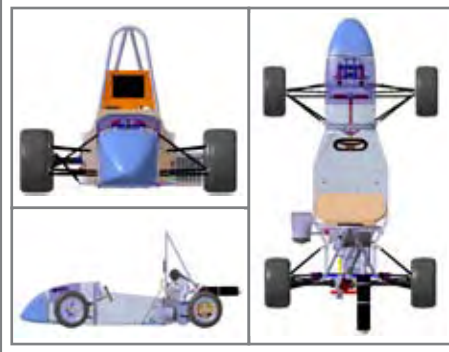
MAX TORQUE DESIGN (rpm) 9000

DRIVE TYPE Roller chain

DIFFERENTIAL Torsen University Special gearset, TUDelft Housing

COOLING Chassis mounted radiator in front of left rear tire with ECU controlled electric fan

BRAKE SYSTEM 3-Disk system, solid mounted rotors with 200/180 mm diameter, brake balance adjustable,



Diepholz

University of Applied Sciences Diepholz, Germany

Car 44

FRAME CONSTRUCTION Space frame
MATERIAL S235JR steel round tubing 10 to 25mm
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2785 / 1495 / 1311
WHEELBASE (mm) 1785
TRACK (Fr / Rr) (mm) 1305 / 1325
WEIGHT WITH 68kg DRIVER (Fr / Rr) 148 / 213
FRONT SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper
REAR SUSPENSION Double unequal length A-Arm. Direct acting spring and damper
TYRES (Fr / Rr) Kumho ecsta S700, 180/550 R13 / Kumho ecsta S700, 240/570 R13
WHEELS (Fr / Rr) 6.0x13 ET 10.3mm, 3 pc Al/Mg Rim / 8.0x13 ET 2.6, 3 pc Al/Mg Rim
ENGINE 1999 Kawasaki ZX-6
BORE / STROKE / CYLINDERS / DISPLACEMENT 44/ 66 / 4 cylinder / 599cc
COMPRESSION RATIO 11.8:1
FUEL SYSTEM Original Kawasaki
FUEL 85-95 (or higher) octane unleaded gasoline
MAX POWER DESIGN (rpm) 13000
MAX TORQUE DESIGN (rpm) 12000
DRIVE TYPE Original Kawasaki chain drive
DIFFERENTIAL Torsen T1 or Quaife with 80 % blocking

COOLING Single side pod mounted radiator with thermo-static controlled electric fan
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 230 / 300 mm diameter, brake balance adjustable, dual piston floating calipers



The Racing Team of the FHWT Diepholz (university of applied sciences for economy and mechanics) was founded in September 2005. It constitutes a part of the project studies, where students have to realize a design project from defining the strategy to the completion of the product. When founded, the team consisted of four students of mechanical and two of industrial engineering. In March 2006 another six students joined the team (each three students of mechanical and industrial engineering).

Since this is the first participation in an FS event, the main attention for the Formula Student Germany Event in August is not to win but to take part, meet many other racing addicted students from all over the world and of course we want to gain experience to build up a successful FS team at our university.

Dortmund

University of Applied Sciences Dortmund, Germany



Eleven students of the FH-Dortmund founded this team in December 2005. We thought it was possible to design and to produce a Formula Student Racing Car within eight months. In our first year our goal is to join the fray, not to win it. Another goal is to establish this competition at our university of applied science to become more and more competitive in the following years.

To realize a road worthy car within eight months, we focussed on simple cheap and conventional solutions, but we can also present some special features as the monocoque or the wandfluh steering. If and how we could handle this sporty schedule ... see for yourself!

Car 911

FRAME CONSTRUCTION Rear steel tube space frame/
Front monocoque

MATERIAL Steel tube/ GRP

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2390 / 1275 / 1010

WHEELBASE (mm) 1900

TRACK (Fr / Rr) (mm) 1200 / 1100

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 116 / 164 (full wet car weight of 190 kg)

FRONT SUSPENSION German-A spring/damper units (black-springs), directly mounted to lower wishbones

REAR SUSPENSION German-A spring/damper units (red-springs) by push-rod and subframe

TYRES (Fr & Rr) 16/53-13 Michelin FR 20

WHEELS (Fr / Rr) BBS-alloy 6J x 13", offset 10.8mm / BBS-alloy 8J x 13", offset 2.6mm

ENGINE 1988 Suzuki GSX 600 F, DOHC 16 Valve, GN72B-Type

BORE / STROKE / CYLINDERS / DISPLACEMENT 62.6mm / 48.7mm / 4 cylinder / 599cc

COMPRESSION RATIO 11.3:1

FUEL SYSTEM Student Built Carbon Fibre Intake Manifold w/ aluminium runners, Carburetor replaced by Multipoint Fuel Injektion w/ Standalone Engine Management System, Semi Sequential

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 11000

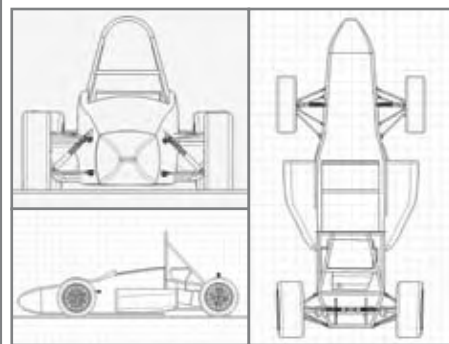
MAX TORQUE DESIGN (rpm) 9600

DRIVE TYPE Chain drive # 530er

DIFFERENTIAL No differential used

COOLING Single oil cooler w/ fan in sidebox

BRAKE SYSTEM 3-Disk system, brake balance adjustable, Suzuki calipers



Dortmund

University of Dortmund, Germany

Car 111

FRAME CONSTRUCTION Front and rear Tubular space frame

MATERIAL 15CDV6 stell round tubing 16mm to 25mm dia

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2893 / 1459 / 1221

WHEELBASE (mm) 1700

TRACK (Fr / Rr) (mm) 1300 / 1200

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 157 / 193

FRONT SUSPENSION Double wishbone suspension. Push rod actuated horizontally oriented spring and damper

REAR SUSPENSION Double wishbone suspension. Push rod actuated vertically oriented spring and damper

TYRES (Fr / Rr) 20.5"x6.0"-13, Hoosier R25A / 20.0"x7.5"-13, Hoosier R25A

WHEELS (Fr / Rr) 6.0x13, 10.8mm offset, 3 pc Al-Mg Rim / 8.0x13, 2.6mm offset, 3 pc Al-Mg Rim

ENGINE KTM 640 LC4

BORE / STROKE / CYLINDERS / DISPLACEMENT 101mm / 76mm / 1 cylinder / 609cc

COMPRESSION RATIO 9.4:1

FUEL SYSTEM Sequential intake manifold fuel injection by Silent Hektik (Unna, Germany)

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 7500

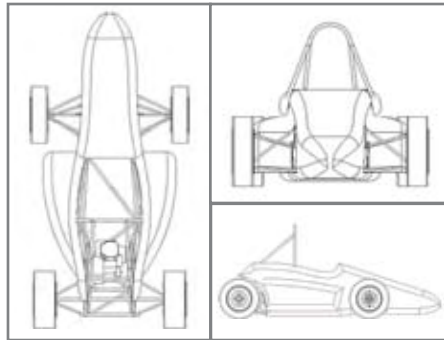
MAX TORQUE DESIGN (rpm) 4500

DRIVE TYPE Chain drive

DIFFERENTIAL No differential

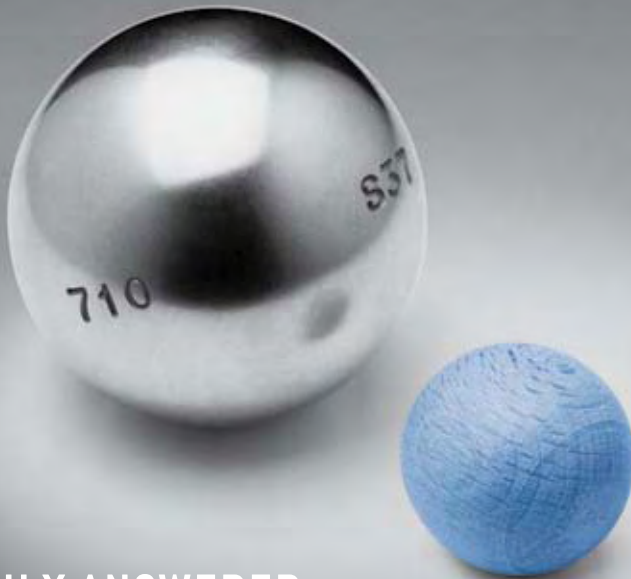
COOLING Heat exchanger with single radiator, controlled by coolant temp

BRAKE SYSTEM 3-Disk system, solid mounted rotors with 180 / 240 mm diameter, brake balance adjustable, dual piston calipers



As a "rookie" the GET-Racing Team from Dortmund presents its first car, the GET-GT06, at the FSG 2006. Aiming at good driving performance and reliability, the design of the GET-GT06 focuses on low weight, a solid and powerful engine, and good handling characteristics. These features are obtained by using the latest state of the art technology in both the construction and the manufacturing process. Using newest software programs, the construction requirements, set by the Formula Student Competition 2006, are easily met, and the most advantage is taken out of every seemingly limiting factor. A 1-cylinder 609cc high torque engine is turbocharged to increase power and yet lower the gas usage. The wheelbase is kept as short as possible to obtain a good agility on tight courses. To even excel the handling characteristics, a high quality suspension system and steering system is engineered, using just the finest of parts. To set apart the University of Dortmund's GET-Racing Team from other Formula Student Teams, the parts used in building the GET-GT06 are made mainly in Germany.

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Ravensburg University of Cooperative Education, Germany

Car 25

FRAME CONSTRUCTION Steel tube space frame with glued glass fibre paper honeycomb floor panels

MATERIAL St60 mild steel tube - cold drawn seamless

OVERALL LENGTH / WIDTH / HEIGHT (mm) 3064 / 1470 / 1083

WHEELBASE (mm) 1642

TRACK (Fr / Rr) (mm) 1315 / 1190

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 151 / 177

FRONT & REAR SUSPENSION Unequal length Y-Arms. Pull rod actuated ZF Sachs RD 36-2 spring/damper units

TYRES (Fr / Rr) 520mm O.D. 152.4mm width (20.5 x 6.0-13) R25A Hoosier / 520mm O.D. 177.8mm width (20.5 x 7.0-13) R25A Hoosier

WHEELS (Fr / Rr) BBS alloy 13" x 6", 23.5mm offset, magnesium hub, aluminium / BBS alloy 13" x 7" 28mm offset, 4mm thick 6061 aluminium

ENGINE 2005 Yamaha YZF R6

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 600cc

COMPRESSION RATIO 12.4:1

FUEL SYSTEM Student designed/built fuel injection system using YCR ECU and Powercommander

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 10000

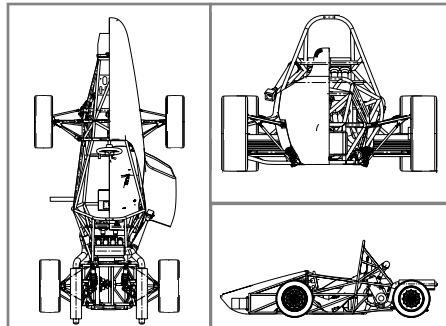
MAX TORQUE DESIGN (rpm) 6200

DRIVE TYPE Chain #530

DIFFERENTIAL Quaife Torsen QDF7ZR

COOLING Twin Audi A4 AC heat exchange radiators mounted in sidepods

BRAKE SYSTEM 4-Disk system, solid mounted rotors with 240 mm diameter, brake balance adjustable, single piston calipers



The BA Racing Team was founded in August 2005 by Michael Johne and Christian Chramm. Being on internships in Canada respectively in the USA over the summer, they worked together with the local university formula teams. Fascinated by the motivation and team spirit of those teams the idea came up to launch such a project back home in Germany.

Inspired by this enthusiasm and the intense contact with all areas of race car development, they started concept and design of their first car in October 2005 with 23 fellow engineering students.

At the University of Cooperative Education Ravensburg with its engineering department in Friedrichshafen at the Lake Constance, all students are simultaneously employed at companies related to the automotive industry.

BART 06 is a first year car with a total development time of less than ten months starting from scratch. The main goal was to design a reliable, safe and competitive vehicle that is capable to win the Formula Student Germany Competition 2006.

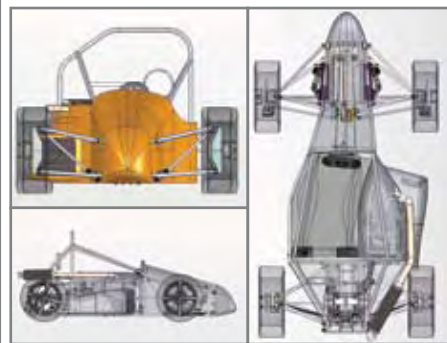
Geelong Deakin University, Australia



At the beginning of 2004 Deakin Race Technologies had a dramatic change of design direction, the team has since gained a wealth of knowledge and experience about their unique side mounted single cylinder design incorporating many composite components. With an evolutionary approach now able to be taken with the concept the 2005 vehicle was completed on schedule and put through an intensive testing program. During testing the car demonstrated impressive overall performance. Unfortunately failing the endurance event left the team with 12th place overall in 2005 and 5th in design. With the team keen to demonstrate the performance potential of concept further testing has taken place and the team is looking forward to the challenge of proving itself on the world stage. While the inaugural 2006 Formula Student Germany event is the first event for Deakin Race Technologies internationally the team is looking forward to competing against an undoubtedly high calibre field of cars. Regardless of expectations, we're all looking forward to the experience and the opportunity to meet with fellow Formula Student/SAE devotees from around the world.

Car 24

FRAME CONSTRUCTION Full carbon fibre monocoque
MATERIAL 2X2 twill 3K carbon fibre w/ 20mm Nomex honeycomb core; Rollhoops: mild steel
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2400 / 1300 / 980
WHEELBASE (mm) 1530
TRACK (Fr / Rr) (mm) 1140 / 1050
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 118 / 138
FRONT & REAR SUSPENSION Unequal length A-Arms. Pull rod actuated Fox Vanilla spring/damper unit
TYRES (Fr & Rr) 20 x 6.5 x R13, Goodyear R065
WHEELS (Fr & Rr) custom in house carbon fibre 13" x 152mm -40mm offset
ENGINE 2004 KTM 525 EXC single cylinder
BORE / STROKE / CYLINDERS / DISPLACEMENT 95mm / 72mm / 1 cylinder / 510cc
COMPRESSION RATIO 11:1
FUEL SYSTEM Student des/built, fuel injection, sequential
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 8000
MAX TORQUE DESIGN (rpm) 4000
DRIVE TYPE Chain #520
DIFFERENTIAL Custom made 7075 aluminium spool
COOLING Side pod mounted radiator with electric fan controlled by Motec M400 ECU
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 230 / 205 mm diameter, brake balance adjustable, dual piston calipers

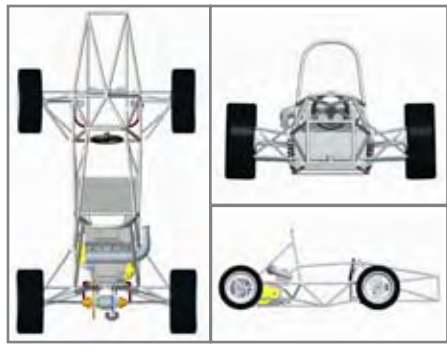


Glasgow

University of Strathclyde, United Kingdom

Car 12

FRAME CONSTRUCTION Mild steel tube space frame
MATERIAL Mild steel, seamless
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2775 / 1400 / 925
WHEELBASE (mm) 1570
TRACK (Fr / Rr) (mm) 1220 / 1210
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 133 / 155
FRONT SUSPENSION Unequal length A-Arms. Pull rod actuated Risse spring/damper units
REAR SUSPENSION Unequal length A-Arms. Push rod actuated Risse spring/damper units
TYRES (Fr & Rr) Avon 6.5x13
WHEELS (Fr / Rr) 13"x150mm - 1" offset / 13"x170mm - 2" offset
ENGINE Honda CBR 600 Fx
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student designed/built fuel injection system using DTA ECU
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10500
MAX TORQUE DESIGN (rpm) 8000
DRIVE TYPE Chain #520
DIFFERENTIAL Zexel Torsen University Special modified. Bias ratio 2.6:1
COOLING Single 250 by 350mm aluminium radiator mounted above engine with cowled 9" fan
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 260 / 250 mm diameter, brake balance adjustable, single piston calipers



Formula Student Germany marks Strathclyde University's first trip outside the UK in our seven year history. Ever increasing interest has resulted in our biggest team ever, comprising of over thirty students representing a wide range of university departments, and ranging from first to final year level.

The main design aims for the car were to improve vehicle reliability, make the car easy to drive and to finish early to maximise testing time. In order to achieve these design goals efforts were made to keep the car as simple, as easy to manufacture and as easy to maintain as possible.

The team has also spent a considerable amount of time this year developing an engine dynamometer facility which has allowed us to develop a competitive engine package for the first time. The team are confident that their efforts will ensure success at Formula Student Germany. We would like to thank the university and our sponsors for the kind support that they have offered throughout the year.

Graz

Technical University Graz, Austria



The TUG Racing Team was founded in January 2003 by students of the Graz University of Technology on their own account. In July 2004, we entered into a Formula Student event in Class one for the first time. With our last season's model, the Tankia2005 (There are no kangaroos in Austria), we managed to win the competitions in Germany and Italy and came in 4th in England.

This year, we aim to repeat and top these successes with our new Tankia2006. Some of the car's highlights include the CFK-Monocoque, a CFK-multi-function steering wheel, and the investment-casting rear. Compared to its prize-winning predecessor, the Tankia2006's weight has been dramatically reduced, the car is more powerful and also, more beautiful.

One of our strongest points is our team spirit. Motivated team members from an engineering background as well as from economic studies apply all their knowledge and creativity to make certain that we built the best car we possibly can.

Car 1

FRAME CONSTRUCTION Front: carbon fibre monocoque (including connection with engine), Rear: investment cast (combines rear frame and differential mount)

MATERIAL Monocoque: carbon fibre/ kevlar/ paper honeycombs (NOMEX) with carbon-inserts; casting: Aluminium 7075

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2695 / 1410 / 1010

WHEELBASE (mm) 1575

TRACK (Fr & Rr) (mm) 1200

WEIGHT WITH with 68kg **DRIVER (Fr / Rr)** 118 / 133

FRONT SUSPENSION Double unequal length A-Arm. Pull rod actuated horizontally oriented spring and damper

REAR SUSPENSION Double unequal length A-Arm. Push rod actuated none horizontally oriented spring and damper

TYRES (Fr / Rr) 6.2/20.0-13 Avon, A45 / 7.2/20.0-13 Avon, A45

WHEELS (Fr / Rr) 330.2mmx152.4mm (13"x6") BBS 6061 Al rim flanges, Mg center / 330.2mmx177.8mm (13"x7") BBS 6061 Al rim flanges, Mg center

ENGINE Yamaha R6 2003

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 599cc

COMPRESSION RATIO 13.4:1

FUEL SYSTEM Student des/built, fuel injection, sequential

FUEL 100 octane unleaded gasoline

MAX POWER DESIGN (rpm) 13500

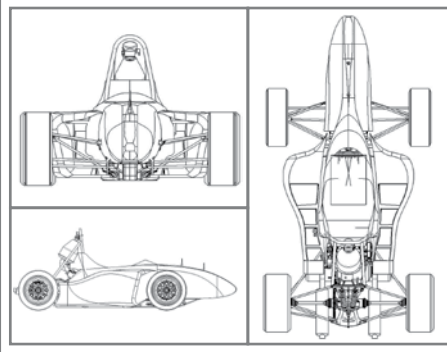
MAX TORQUE DESIGN (rpm) 8000

DRIVE TYPE DID 520 chain

DIFFERENTIAL Zexel Torsen Type-A Formula SAE special, limited slip

COOLING Twin side pod mounted radiators with thermostatic controlled electric fans

BRAKE SYSTEM 4-Disk system, solid mounted rotors with 200 / 175 mm diameter, brake balance adjustable, four and two piston floating calipers



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Graz

University of Applied Sciences Graz, Austria



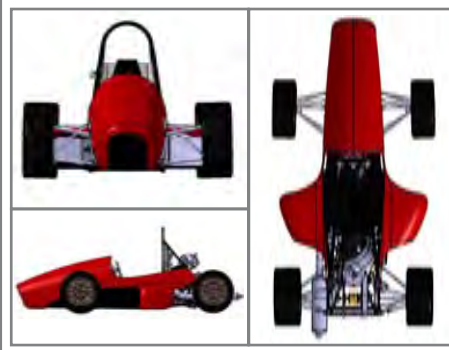
The team of joanneum racing graz is very proud to present its third Formula Student racing car, the jr06. The basic team consists of 25 Students of the University of Applied Sciences Graz study course Automotive Engineering.

The very special thing about our racing team is that we do not only build a completely new racing car every year, but we also start off with a completely new team each season. The reason for this is our very dense course program which doesn't allow a student to spend more than a year's time for the project, since we must attend an internship in our seventh semester. Besides we all attend compulsory courses every day and sit our required examines in order to pass the semester.

The concept behind the jr06 was to build an aggressive, agile and of course very fast Formula Student racing car. We are confident to be able to meet a good result in Hockenheim by applying a fairly step forward basing on the knowledge of two successful racing seasons in the past.

Car 10

FRAME CONSTRUCTION Steel tube space frame with glued carbon fibre floor panels and side panels
MATERIAL E 235/ E 355 mild steel tube - cold drawn seamless
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2650 / 1370 / 1030
WHEELBASE (mm) 1600
TRACK (Fr / Rr) (mm) 1180 / 1130
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 138 / 155.5
FRONT & REAR SUSPENSION Unequal length wishbones. Push rod actuated DT Swiss HVR 200 progressive air spring/damper units
TYRES (Fr / Rr) 6.2 - 20.0 - 13 AVON A45 / 7.2 - 20.0 - 13 AVON A45
WHEELS (Fr / Rr) 6x13 BBS magnesium wheels, 12.3mm offset / 7x13 BBS magnesium wheels, 25mm offset
ENGINE Rotax Type jr06
BORE / STROKE / CYLINDERS / DISPLACEMENT 100mm / 77.6mm / 1 cylinder / 609.45cc
COMPRESSION RATIO 9.8:1
FUEL SYSTEM Student designed/built fuel injection system using MoTec M4 ECU
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 7000
MAX TORQUE DESIGN (rpm) 6000
DRIVE TYPE Chain #520
DIFFERENTIAL Self designed clutch pack limited slip differential in cooperation with DREXLER motorsport
COOLING Single KTM cooler mounted in side pod, radiator with thermostatic controlled electric fan
BRAKE SYSTEM 4-Disk system, floating mounted rotors with 240 / 220 mm diameter, brake balance adjustable, four and two piston calipers



Hamburg

Hamburg University of Applied Sciences, Germany

Car 69

FRAME CONSTRUCTION Tubular space frame
MATERIAL 1020 and 4130 steel round tubing .5" to 1.125" dia/ 2024-t3 .031" thk Al sheet
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2961 / 1376 / 1124
WHEELBASE (mm) 1800
TRACK (Fr & Rr) (mm) 1200
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 170 / 180
FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper
TYRES (Fr / Rr) 205x55 R13, Hoosier R25A / 235x50 R13, Hoosier R25A
WHEELS (Fr / Rr) 7.5x13, 10.8mm offset, 3pc Al Rim / 7.5x13, 10.8mm offset, 3pc Al Rim
ENGINE 2003 Kawasaki ZX-6 RR
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 13.0:1
FUEL SYSTEM Trijekt Engine Management Ver. 3, 3D-Map, half sequential
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 12000
MAX TORQUE DESIGN (rpm) 8000
DRIVE TYPE Chain drive 14: 52
DIFFERENTIAL Torson clutch pack limited slip, 100Nm preload, 1.4 bias ratio
COOLING Twin side pod mounted radiators with thermo-static controlled electric fans
BRAKE SYSTEM 4-Disk system, solid mounted and vented rotors with 210 mm diameter, brake balance adjustable, single piston calipers



The Hawks Racing Team of the HAW Hamburg was founded in 2003. Yet it was not the first team at our University: One year before there was another group called "HAW Hamburg Racing" which split up due to internal problems and left the front half of a rolling chassis.

So the newly founded Hawks Team started its work with designing the missing parts of the car. It was a roughly organized group of students, which finished the first car in 2004. Unfortunately, and because of a lack of organization in the team, this car was not completely adapted to the FSAE rules. When we ran our first competition (2004 in England), the car was not rated in the dynamic events. Nevertheless, the overall rating was 151 points, and we were placed on the 48th position of 54 teams.

After this event, the team decided to take two years for designing the next car and for establishing a working team structure. From 2004 until today we managed to achieve this goal, to build a completely new car and to proof ourselves as a reliable and attractive partner for our sponsors and our university.

Helsinki

Helsinki Polytechnic, Finland



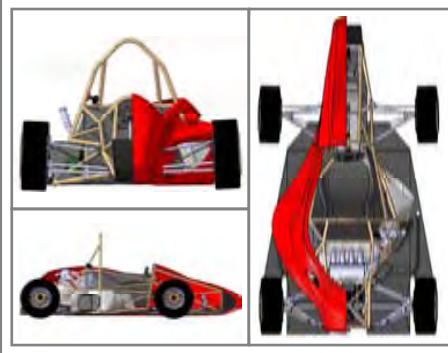
Helsinki Polytechnic Formula Engineering Team is proud to present its fourth complete Formula SAE / Student race car, the HPF006. Our ambitious 14-member team has worked very hard to reach the set design objectives and to be one of the top teams in the world.

Our team consists of ten automotive design-, two automotive electronics- and two after sales engineering students. Because of the small size of our team every member has their very own special field in manufacturing process. This year we started a conquest of a new area in our race car development: aerodynamics.

Helsinki Polytechnic has been participating Formula SAE / Student competitions since 2002. During that time we have been very successful and won many awards e.g. Best European Team in Formula Student England three times. In Helsinki Polytechnic Formula Engineering Team we believe that year 2006 will turn a new page in our tale of success.

Car 3

FRAME CONSTRUCTION Steel tubular space frame
MATERIAL Ruukki cold-formed high-strength steel
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2546 / 1470 / 996
WHEELBASE (mm) 1550
TRACK (Fr / Rr) (mm) 1250 / 1200
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 124.2 / 151.8
FRONT & REAR SUSPENSION Double unequal length A-Arm. Pull rod actuated horizontally oriented spring and damper
TYRES (Fr & Rr) 18x6.0-10 R25A Hoosier
WHEELS (Fr & Rr) 6.5x10, 16mm neg offset, 3pc Al Rim
ENGINE 2004 Yamaha R6
BORE / STROKE / CYLINDERS / DISPLACEMENT 44.5mm / 65.5mm / 4 cylinder / 600cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Self developed custom made sequential fuel injection
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 8000
MAX TORQUE DESIGN (rpm) 7000
DRIVE TYPE Chain
DIFFERENTIAL Friction plate differential, two different ramp angle setups available at the same diff
COOLING Side pad mounted radiator with ECU controlled electronic fan
BRAKE SYSTEM 4-Disk system, solid mounted rotors with 200 mm diameter, brake balance adjustable, four and two piston calipers

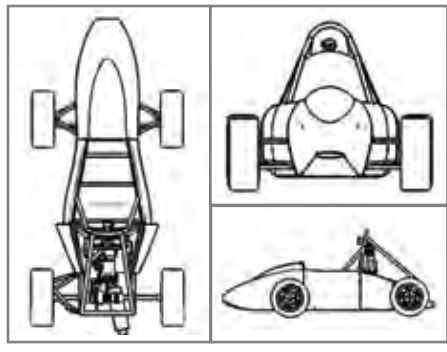


Kiel

University of Applied Sciences, Germany

Car 53

FRAME CONSTRUCTION Tubular space frame
MATERIAL Steel round tubing St35-BR =RSt37-2
 1.0038
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2950 / 1430 / 1208
WHEELBASE (mm) 1660
TRACK (Fr / Rr) (mm) 1260 / 1245
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 180 / 180
FRONT & REAR SUSPENSION A-arms, double unequal length, paralell suspension: Pull-rod to vertical dampers
TYRES (Fr / Rr) 20.0 x 6.5 x 13 Goodyear Eagle 065 / 20.0 x 7 x 13 Goodyear Eagle 065
WHEELS (Fr & Rr) Schmidt TH-Line 3pc 7J x 13
ENGINE 2004 Honda CBR 600 pc37
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Trijekt, 8 Honda CBR fuel injectors, sequential, Honda CBR 600 pc37 fuel pump in tank
FUEL 100 octane unleaded gasoline
MAX POWER DESIGN (rpm) 11200
MAX TORQUE DESIGN (rpm) 8500
DRIVE TYPE 525 DID Chain
DIFFERENTIAL Quaife torque biasing differential
COOLING Single back mount radiator w/ two RPM controlled electronic fans
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 210 / 265 mm diameter, brake balance adjustable, four and two piston calipers



Founded in July of the year 2005 the raceyard Formula Student Team of the Fachhochschule Kiel is going in for their first season of the Formula Student Germany.

The large diversity of study courses like mechanical engineering, marketing and purchasing in engineering and business administration helped our team a lot to find a smart assignment of the different tasks which need to be accomplished when it comes to the construction and financing of a formula student racecar. We are proud to say, that our complete car, the "t_KIELa 06", has been constructed next to our regular studies and without any help of professors or professionals.

Schleswig-Holsteins first and only Formula Student team is not only featuring a lot of presence in the media but also the typical North-German coolness to handle any kind of multidisciplinary task. As a rookie in the grid we are of course hoping for the best rookie award and furthermore for a long lasting and bright Formula Student future at the Fachhochschule Kiel.

Konstanz

University of Applied Sciences Konstanz, Germany



“Ittis06” is the name of the first fast car of the “Bodensee-Racing-Team”– and it is built to score a victory in the highest racing class for the University of Konstanz after a third place in class 3 in 2005.

The BRT consists of 27 students, whose interdisciplinary work is a tribute to their newly-accredited faculty, as its new name is university of engineering, economy and design. This intricately woven interdisciplinary work constitutes the basis of the team structure.

With its elaborate and innovative technology the team will impressively catch both people’s eyes and the winner’s trophy.

Due to an economical and complex set-up the BRT is accompanied by strong partners. Prestigious events like the presentation of the car on a ferry in Konstanz and several appearances on TV substantiate this strong partnership and create room for further creativity.

All this is based on a consistent and impressively designed team which makes the team into what it is: a serious aspirant for the title!

Car 15

FRAME CONSTRUCTION Tubular space frame
MATERIAL 1.4301 stainless steel round tubing with 25mmx2mm and 25mm x 2.5mm tubing area
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3215 / 1420 / 1475
WHEELBASE (mm) 1680
TRACK (Fr / Rr) (mm) 1280 / 1252
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 130 / 148
FRONT & REAR SUSPENSION Double unequal length A-Arm. Pull rod actuated horizontally oriented spring and damper
TYRES (Fr / Rr) 20.5x6-13, Hoosier R25A / 20.5x7-13 R13, Hoosier R25A
WHEELS (Fr / Rr) 6.0x13, 10.8 mm offset, 3pc Al Rim from BBS / 8.0x13, 2.6 mm offset, 3pc Al Rim from BBS
ENGINE 2003 Suzuki GSXR600
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 43.0mm / 4 cylinder / 599cc
COMPRESSION RATIO 12.2:1
FUEL SYSTEM Student des/built, fuel injection, sequential
FUEL 87-91 octane unleaded gasoline
MAX POWER DESIGN (rpm) 13000
MAX TORQUE DESIGN (rpm) 12000
DRIVE TYPE CVT
DIFFERENTIAL Torsen Toyota SAE-Unit
COOLING Left sidepod mounted radiator with thermostatic controlled electric fans
BRAKE SYSTEM 4-Disk system, floating mounted rotors with 240 mm diameter, vented, brake balance adjustable, four and two piston calipers



Lancaster

Lancaster University, United Kingdom

Car 128

FRAME CONSTRUCTION Triangulated steel tube space frame with aluminium floor panels where necessary

MATERIAL Mild steel tube

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2336 / 1370 / 1010

WHEELBASE (mm) 1700

TRACK (Fr / Rr) (mm) 1200 / 1060

WEIGHT WITH 68kg DRIVER (Fr / Rr) 128.25 / 156.75

FRONT & REAR SUSPENSION Unequal length A-Arms. Pushrod actuated via BellCrank to horizontally mounted Fox Vanilla RC spring/damper units

TYRES (Fr & Rr) Hoosier 20 x 6.0-13 R25A Compound

WHEELS (Fr & Rr) Caterham 8 Spoke

ENGINE 2003 Honda CBR F4i

BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc

COMPRESSION RATIO 13.3:1

FUEL SYSTEM Student Design/ built, fuel injection, non-sequential

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 11000

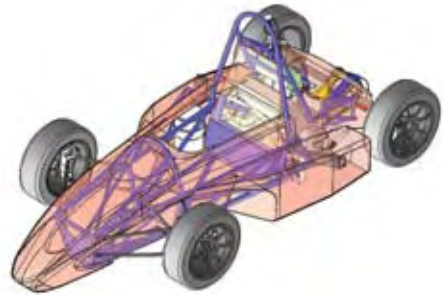
MAX TORQUE DESIGN (rpm) 8000

DRIVE TYPE Non O-Ring 530 chain

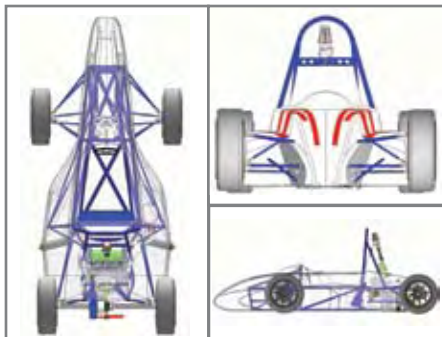
DIFFERENTIAL Zexel Torsen University Special in student designed custom aluminium housing

COOLING Single Aluminium Radiator in sidepod, SAMCO tubing

BRAKE SYSTEM 3-Disk system, floating mounted rotors with 240 / 200 mm diameter, brake balance adjustable, four and one piston calipers



This year's entry 'LR06' is based around a sub-25kg, fully triangulated steel space frame chassis which was designed and analysed in Solidworks and Ansys before being constructed in house. LR06 is powered by a fully stressed 2003 Honda CBR 600 engine with a custom designed and built dry sump system. 13inch wheels have allowed greater suspension spread angles and helped reduce the chassis weight over previous entries. Also new is a Torsen differential in a custom aluminium housing with a single rear brake rotor. The stopping power is provided by a tried and tested dual outboard brake setup on the front and, following an extensive test program, dual mountain bike callipers on the single inboard rear brake. This year's car features novel use of electronics as a closed loop gear change actuator using a DC brushless motor mounted to the gear change shaft with steering wheel mounted shift buttons which improves the reliability of gear changes.





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Loughborough

Loughborough University, United Kingdom

Car 60

FRAME CONSTRUCTION Steel tube space frame with bonded glass fibre stiffener panels

MATERIAL CDS mild steel tube with various OD and thicknesses

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2298 / 1368 / 944

WHEELBASE (mm) 1700

TRACK (Fr / Rr) (mm) 1180 / 1130

WEIGHT WITH 68kg DRIVER (Fr / Rr) 146 / 152

FRONT & REAR SUSPENSION Unequal length A-Arms.

Push rod actuated 3-way adjustable coil-over dampers

TYRES (Fr & Rr) 20x7-13 R065 Goodyear

WHEELS (Fr & Rr) Custom aluminium casting for outer rim welded to spun inner rims

ENGINE 2003 Triumph Daytona 4 cylinder in-line

BORE / STROKE / CYLINDERS / DISPLACEMENT 68mm / 41.3mm / 4 cylinder / 599cc

COMPRESSION RATIO 12.5:1

FUEL SYSTEM Triumph sequential multipoint fuel injection system mounted with bespoke plenum using DTA Fast Pro 8 ECU

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 10700

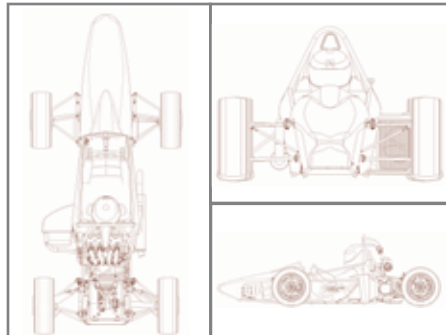
MAX TORQUE DESIGN (rpm) 7300

DRIVE TYPE Chain

DIFFERENTIAL Quaife Diff, QDF7ZR

COOLING Single radiator with additional electric booster pump mounted alongside chassis

BRAKE SYSTEM 4-Disk system, floating mounted rotors with 230 mm diameter, brake balance adjustable, two piston calipers



2006 sees the edifice of LUMotorsport's 4th Formula Student car. The team has previously entered into the UK Formula Student events since 2003, however this will be the first year the team enters both the UK event and the German event. To allow the team to make it to the Germany there has been an extra sponsorship drive to raise funds, and we thank all that have helped.

LFS06 (Loughborough Universities 2006 car) has been made possible by the commitment of over 25 team members and many academic design projects, namely the Automotive Engineering Part D Design Teams and Mechanical Engineering Final Year Project Groups. This combined effort allowed us to have a finished chassis by December 2005, and the finished car has been testing since the beginning of May 2006.

The teams' aims for the 2006 season are to achieve a top 10 finish in the Formula Student event, a top 10 finish in the German event whilst entering a hill climb in between the two. The option to enter our vehicle into another relatively local event other than the UK event has been welcomed with open arms. Finally it allows us to prove the worth of our vehicle at more than one weekend event.

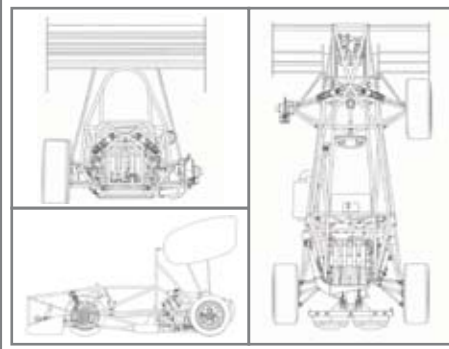
Melbourne Monash University, Australia



The Monash University Formula SAE team is from Melbourne, Australia and has been competing in the FSAE-Australasian competition since 2000. Our 2005 car which we are bringing to Germany features a carbon fibre reinforced steel chassis, Honda CBR 600 engine, a unique double reduction driveline and multi-element wings developed in the Monash University full scale wind tunnel. This car finished 6th overall at the recent Australian competition and we are looking to improve on this result in Germany. Our team would like to thank our major sponsors Monash University, plm Australia, HONDA, J&R Aerospace and Holden Australia for making this trip possible. For more information please see our website at <http://users.monash.edu.au/~fsae/> or email our Team Leader Andrew Brandt at ajbra5@student.monash.edu.au

Car 99

FRAME CONSTRUCTION Steel tube space frame with bonded Carbon Fibre panelling
MATERIAL 1020 Mild Steel, Carbon Fibre, Aluminium Honeycomb
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2850 / 1300 / 1087 (Top of chassis), 1477 (Top of rear wing)
WHEELBASE (mm) 1550
TRACK (Fr / Rr) (mm) 1150 / 1100
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 154 / 154
FRONT SUSPENSION Unequal length A-Arms. Push rod actuated spring/damper unit
REAR SUSPENSION Unequal length A-Arms. Pull rod actuated spring/damper unit
TYRES (Fr & Rr) 20x7.2-13 A45 Avon
WHEELS (Fr / Rr) 7x13, 25.4mm offset, 3pc Al Rim / 7x13, -76.2mm offset, 3pc Al Rim
ENGINE 1996 Honda CBR600
BORE / STROKE / CYLINDERS / DISPLACEMENT 65mm / 45.2mm / 4 cylinder / 600cc
COMPRESSION RATIO 12:1
FUEL SYSTEM MoTeC M400 ECU, CBR600F4i injectors and fuel pressure regulator
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 8500
MAX TORQUE DESIGN (rpm) 7000
DRIVE TYPE Double reduction chain
DIFFERENTIAL Honda Suretrac Cam and Pawl Torque Biasing Differential, 3.5 bias ratio
COOLING Twin rear mounted radiators with thermostatic controlled electric fans
BRAKE SYSTEM 3-Disk system, floating mounted rotors with 210 / 160 mm diameter, brake balance adjustable, four and two piston calipers

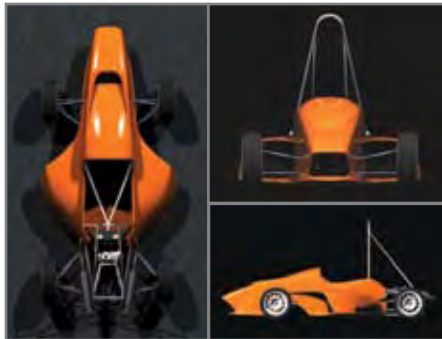


Moscow

MADI (STU), Russia

Car 75

FRAME CONSTRUCTION Tubular space frame
MATERIAL Steel round tubing with carbon content 0.30%, 1" dia
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2940 / 1700 / 1520
WHEELBASE (mm) 2200
TRACK (Fr & Rr) (mm) 1650
WEIGHT WITH 68kg DRIVER (Fr / Rr) 119 / 221
FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper
TYRES (Fr & Rr) 175x60 R13, Yokohama A539
WHEELS (Fr & Rr) 5.5x13, 35mm offset, 1pc forged Rim
ENGINE 2006 YAMAHA FZ-6
BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 600cc
COMPRESSION RATIO 12.2:1
FUEL SYSTEM Yamaha, fuel injection, sequential
FUEL 95 octane unleaded gasoline
MAX POWER DESIGN (rpm) 8000
MAX TORQUE DESIGN (rpm) 7000
DRIVE TYPE Chain drive
DIFFERENTIAL Planetary
COOLING Left side pod mounted radiator with thermo-static controlled electric fan
BRAKE SYSTEM 4-Disk system, solid mounted rotors with 200 mm diameter, brake balance adjustable, two piston calipers



Student's Engineering Group MADI - team from Russia. Last September, on its 75th anniversary, Moscow State Technical University for Automobiles and Road Construction (MADI) founded Russia's first FS Team - SEG-MADI. In 2004, MADI faculty representative, Sergey Safronenkov visited the UK on a fact finding tour. Following discussions at Cranfield University on motorsport double degree course with MADI (STU), he attended a 2005 FS event at Bruntingthorpe where he could meet other FS teams. Talks were held with Steve Daum, collegiate program manager from SAE International and FS teams from Stralsund, Oxford Brookes and few others. Upon returning home, Safronenkov reported: "The visit was extremely useful. The achievements of the students are impressive and we definitely would like MADI to participate in the scheme with its own Team". "During our first year we had to overcome many difficulties" says Safronenkov "But I am delighted to confirm that MADI Team will attend the event in Hockenheim".

München

Technical University of Munich, Germany



Since starting in December 2002 with founding the first Formula Student Team in south Germany, the Team has participated at several Formula Student competitions. After the first start at the British Formula Student Competition and the German Fun Event in 2004 with the car called nb05/TA the team used the experiences of the passed season to build a competitive car – the nb05. This car was the basis for two wins in the 2005 season. With the victory in the “Skid Pad” and the “Fastest Lap” at the “Formula Student Germany Pre-Event” Endurance the students of the Technical University of Munich showed the potential of the car and confirmed their vision of a concept for a “Formula Student” car. Also the third car – designated the TUfast nb06 – ran through a complete redesign in the winter 2005, the students kept the light-weight and low centre of gravity concept of the nb05. With more reliability and lots of Composite Parts – among all the new developed Composite Monocoque and the single part Composite Rims – the team tried to make a further step towards the victory.

Car 31

FRAME CONSTRUCTION Carbon fibre monocoque - axle to axle chassis

MATERIAL Carbon fibre: Citec 977-6-42%-6KM46J-2X2T-200-1000 with UD reinforcements

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2823 / 1275 / 948

WHEELBASE (mm) 1650

TRACK (Fr / Rr) (mm) 1260 / 1160

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 114.8 / 140.4

FRONT & REAR SUSPENSION Unequal length A-Arms. Pull rod actuated Cane Creek Double Barrel spring/dampers

TYRES (Fr / Rr) 20.5x6.0-13 R25A Hoosier / 20.5x7.0-13 R25A Hoosier

WHEELS (Fr / Rr) 1pc CFRP 13"x152.4 -27.5mm Offset / 1pc CFRP 13"x177.8 -4mm Offset

ENGINE 2000 Kawasaki ZX600J1

BORE / STROKE / CYLINDERS / DISPLACEMENT 66mm / 43.8mm / 4 cylinder / 599cc

COMPRESSION RATIO 12.8:1

FUEL SYSTEM Student designed/built fuel injection system using own ECU

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 12000

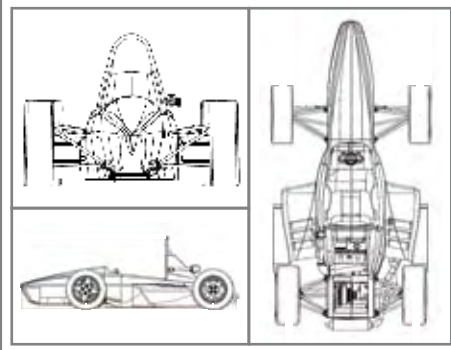
MAX TORQUE DESIGN (rpm) 10000

DRIVE TYPE Chain #520

DIFFERENTIAL Student designed active hydraulic multi-clutch planetary gear differential

COOLING 2 (water cooling) + 2 (oil cooling) heat exchangers mounted in sidepods

BRAKE SYSTEM 3-Disk system, floating mounted rotors with 220 / 160 mm diameter, brake balance adjustable, four and one piston calipers



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München

University of Applied Sciences Munich, Germany

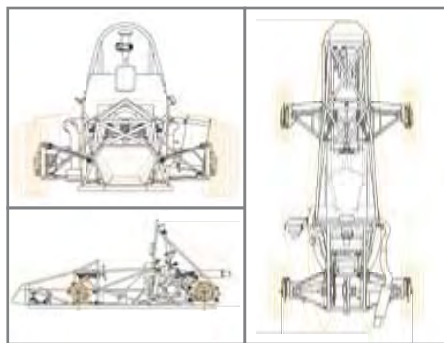


The FHM Racing Team of the Munich University of Applied Sciences, is European-wide the first women's racing team of the Formula Student/SAE. This team is unique in that only female students are driving our car in the events. The FHM Racing Team was founded in the summer of 2005 and has successfully built its first formula project car in less than seven months. This was possible, because the association consists of more than 90 students of various academic departments and class standings. The students are subdivided into several teams, like chassis, engine, electrical equipment, drive train or marketing, financial planning and team organisation. Each team designs and manufactures most of the parts itself. The competition in Hockenheim is our first participation in a racing event.

It is our aim to be very successful and we are absolutely confident to become the best newcomer 2006 because of all our team members' efforts.

Car 13

FRAME CONSTRUCTION Tubular space frame
MATERIAL S235 steel round tubing, 25 to 12 mm dia
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3123 / 1450 / 1251
WHEELBASE (mm) 1750
TRACK (Fr & Rr) (mm) 1250
WEIGHT WITH with 68kg DRIVER 350
FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated, horizontally oriented spring and damper
TYRES (Fr / Rr) 20.5x6 13" (R25A Hoosier) / 20.5x7 13" (R25A Hoosier)
WHEELS (Fr / Rr) 6x13" / 7x13"
ENGINE 2001 Honda CBR 600F PC35
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student des/built, fuel injection
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10500
MAX TORQUE DESIGN (rpm) 8500
DRIVE TYPE 30x10mm cogged belt
DIFFERENTIAL Clutch pack limited slip, 100Nm preload, 1.4 bias ratio
COOLING Single side pod mounted radiators with control unit controlled electric fans
BRAKE SYSTEM 4-Disk system, floating mounted rotors with 197 mm diameter, brake balance adjustable, two piston calipers



Offenburg

University of Applied Sciences Offenburg, Germany

Car 16

FRAME CONSTRUCTION Steel tube space frame with wood floor panels

MATERIAL EN 1.4301 stainless steel tube - cold drawn seamless

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2850/ 1497 / 1334

WHEELBASE (mm) 1650

TRACK (Fr / Rr) (mm) 1300 / 1130

WEIGHT WITH 68kg DRIVER (Fr / Rr) 160 / 240

FRONT & REAR SUSPENSION Double wishbone Koni motorcycle spring/ damper units

TYRES (Fr / Rr) 20"x5.5" R 13 Hoosier / 20"x7.5" R 13 Hoosier

WHEELS (Fr / Rr) BBS 6"x13", 10.8mm offset, 3pc Al Rim / BBS 8"x13", 2.6mm offset, 3pc Al Rim

ENGINE 2004 ITC V0

BORE / STROKE / CYLINDERS / DISPLACEMENT 70.8mm / 51.5mm / 3 cylinder / 609cc

COMPRESSION RATIO 12.5:1

FUEL SYSTEM Student des/built, fuel injection system using MOTEC ECU

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 6200

MAX TORQUE DESIGN (rpm) 6200

DRIVE TYPE VW Käfer 4 speed gearbox

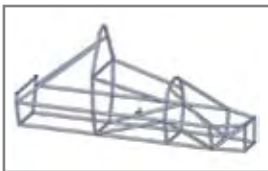
DIFFERENTIAL Original VW Käfer

COOLING Liquid, aluminium radiator mounted in left sidepod

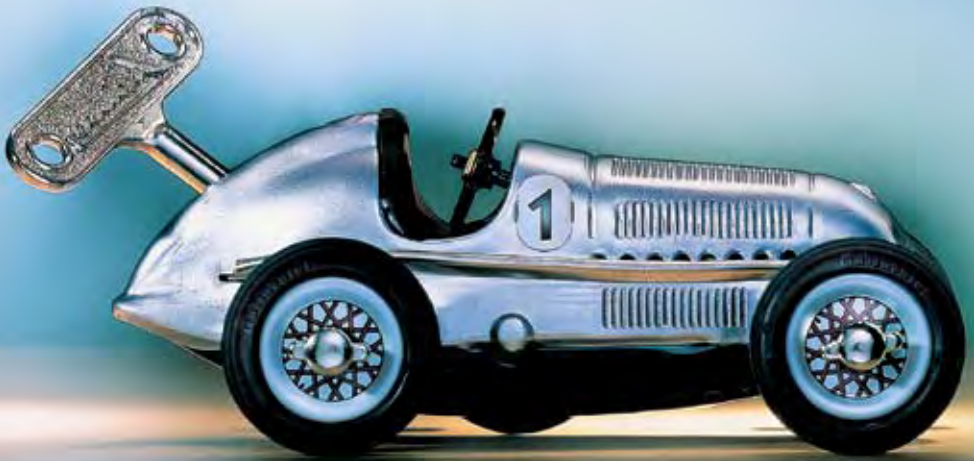
BRAKE SYSTEM 4-Disk system, floating mounted rotors with 240 mm diameter, brake balance adjustable, single piston calipers



The Black Forest Formula Student Team formed in June 2004 after the Formula Student concept had been introduced by Prof. Dr. H.-W. Kuhn, Department Head for Automotive Engineering. The 28 members, coming from 8 different nations, study various fields, i.e. automotive engineering, business administration, communication and media engineering, electrical engineering, energy conversion and management, informatics, mechanical engineering or mechatronics. In July 2005 they participated at their first Formula Student Event in Birmingham/UK.



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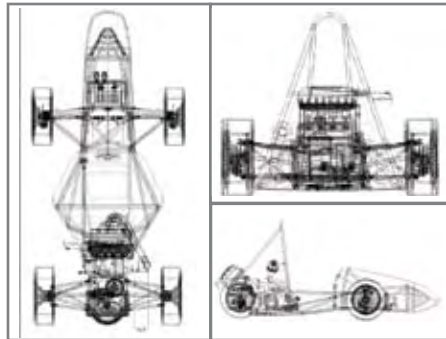
Continental 

Oxford

Oxford Brookes University, United Kingdom

Car 73

FRAME CONSTRUCTION Steel tube space frame
MATERIAL Mild steel tube - cold drawn seamless
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2794 / 1397 / 1168
WHEELBASE (mm) 1585
TRACK (Fr / Rr) (mm) 1200 / 1150
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 129 / 151
FRONT & REAR SUSPENSION Double unequal length A-Arm. Pull rod actuated spring and damper
TYRES (Fr & Rr) 20x6.2 - 13 Avon (A45 Compound)
WHEELS (Fr & Rr) 6x13, 3pc spun Al Rim, magnesium centre
ENGINE Triumph 2005 Speed Four
BORE / STROKE / CYLINDERS / DISPLACEMENT 68mm / 41.3mm / 4 cylinder / 599cc
COMPRESSION RATIO 12.75:1
FUEL SYSTEM Triumph
FUEL 97 octane unleaded gasoline
MAX POWER DESIGN (rpm) 12000
MAX TORQUE DESIGN (rpm) 8250
DRIVE TYPE Chain (520)
DIFFERENTIAL Quaife Automatic Torque Biasing LSD, student modified. Bias ratio 4:1
COOLING Single Aluminium radiator with header tank mounted at rear
BRAKE SYSTEM 3-Disk system, floating mounted rotors with 220 mm diameter, brake balance adjustable, two piston calipers



Oxford Brookes Racing is made up of 34 students ranging from 1st year Automotive Engineering students to MEng, MSc and PhD students. For nearly all students this is their first year involved with Formula Student.

The team is led by two final year engineering students. The emphasis on developing an already proven design has resulted in only a small proportion of the team involved in the design of ISIS06, with the majority performing analysis of previous designs in order to prioritise design effort. The team are continuing their relationship with Avon tyres, on which they currently hold the skid-pad event record.

The car has already proved extremely capable, not only in testing but also in Detroit at FSAE. There it won the cost event and upon starting the enduro was lying within the top 10, before a fuel irregularity put the team out of the event. Needless to say, the team has some unfinished business to attend to!

Stockholm

KTH Royal Institute of Technology, Sweden



KTH R3 is the latest addition of car from the students at KTH Royal Institute of Tecnology. Focus when creating the car has been on building a reliable, high performance race car with easy adjustability. Much effort has been put into making a driver's car by focusing on the driver ergonomics as well as for controls. It has a tubular chassis with a zero lift carbon body along with high functional wings and diffuser. The engine is a turbocharged Yamaha YZF600R with electronic fuel injection and a variable geometry turbine turbo.

The team is all student organized with a few faculty advisors. Anyone at KTH can participate in our team, the conclusion is that we got a very high team spirit.

KTH has only participated in England before starting 2004 with a 4th place and best rookie team. Last year we achieved a 3rd place. This year we came 14th but we know that we can better and we hope that we can show that in Germany.

Car 131

FRAME CONSTRUCTION Steel tube space frame, aramide driver monocoque, bolted carbon fiber floor

MATERIAL Mild steel tube - cold drawn seamless

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2930 / 1500 / 1370

WHEELBASE (mm) 1625

TRACK (Fr / Rr) (mm) 1100 / 1050

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 130 / 193 (full wet car weight of 255kg)

FRONT SUSPENSION Unequal length unparallell A-Arms. Pullrod actuated Öhlins coilovers

REAR SUSPENSION Unequal length unparallell A-Arms. Pushrod actuated Öhlins coilovers

TYRES (Fr / Rr) 6.2/20-13" Avon A45 Slicks / 7.2/20-13" Avon A45 Slicks

WHEELS (Fr / Rr) Compomotive CXR, 6x13, 0 mm offset / Compomotive CXR, 8x13, -12 mm offset

ENGINE 1997 Yamaha YZF600 Thundercat

BORE / STROKE / CYLINDERS / DISPLACEMENT 62mm / 49.6mm / 4 cylinder / 599cc

COMPRESSION RATIO 9.2:1

FUEL SYSTEM Student designed/built fuel injection system, NIRA I3+ ECU

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 8500

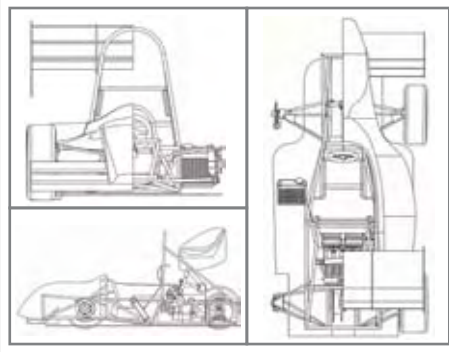
MAX TORQUE DESIGN (rpm) 7500

DRIVE TYPE Chain #530

DIFFERENTIAL Quaife Torsen Differential

COOLING Sidepod mounted copper radiator

BRAKE SYSTEM 3-Disk system, floating mounted rotors with 200 / 270 mm diameter, brake balance adjustable, six piston calipers

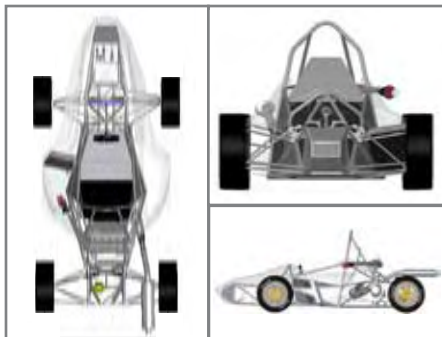


Stralsund

University of Applied Sciences Stralsund, Germany

Car 4

FRAME CONSTRUCTION Tubular frame
MATERIAL 25CrMo4 steel round tubing 10mm to 30mm dia
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2900 / 1260 / 1100
WHEELBASE (mm) 1676
TRACK (Fr / Rr) (mm) 1260 / 1200
WEIGHT WITH 68kg DRIVER (Fr / Rr) 144 / 148
FRONT & REAR SUSPENSION Unequal length A-Arms. Push rod actuated horizontally Fox Vanilla RC spring/damper units
TYRES (Fr / Rr) 20 x 6.0 - 13 R25 Hoosier / 20 x 7.0 - 13 R25 Hoosier
WHEELS (Fr & Rr) 152.4mm wide, 3pc AlMg Rim
ENGINE 1999 Honda CBR 600 PC35
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student designed/built fuel injection system using Haltech ECU
FUEL 100 octane unleaded gasoline
MAX POWER DESIGN (rpm) 10000
MAX TORQUE DESIGN (rpm) 9000
DRIVE TYPE Chain
DIFFERENTIAL Limited slip, manufactured
COOLING Left side pod mounted radiators
BRAKE SYSTEM 3-Disk system, floating mounted rotors with 260 / 230 mm diameter, brake balance adjustable, dual piston calipers



Ten students established the student-racing team of the University of Applied Sciences Stralsund in September 1999. The aim was to participate with a concept as the first German team at the Formula Student 2000 in Birmingham.

In May 2004 the team attended at the "Formula SAE". We reached the 20th place out of 129 started teams and because of this really good result we have been best "European Team".

In July 2004 the team started at the "Formula Student" competition in England. That year we reached the first place in the 1(200) class und we won the price for the "Best Developed Car" and "SolidWorks 3D Design and Analysis" Award. In 2005 „Formula Student Event“ in England the student-racing team with the TY2005 convinced everybody one more time. The team reached an outstanding 6th place in the overall results and proved that we are still the best German team.

In August 2005 the team attended with the TY2004 and the TY2005 at the Pre-Event in Aschersleben and Leipzig. We reached with the 2nd and 4th a TOP end result in the overall results.

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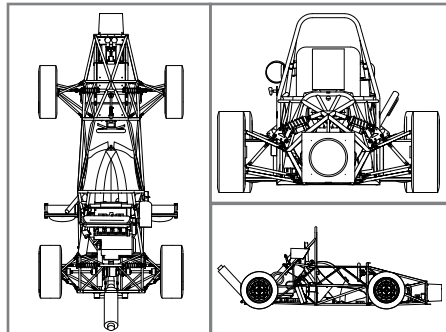


Stuttgart

University of Stuttgart, Germany

Car 29

FRAME CONSTRUCTION Tubular Space Frame
MATERIAL 25CrMo4 steel round tubing 16mm to 25mm dia / (15CDV6 - Main Hoop) / 25CrMo4 metal sheet
OVERALL LENGTH / WIDTH / HEIGHT (mm) 3000 / 1370 / 1120
WHEELBASE (mm) 1730
TRACK (Fr / Rr) (mm) 1215 / 1168.8
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 156 / 172
FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated transversally mounted FOX DHX AIR airspring/damper unit
TYRES (Fr / Rr) 155x60 R13, Hoosier R25A / 205x45 R13, Hoosier R25A
WHEELS (Fr / Rr) 6"x13", -10.8mm offset, 3pc Al Rim / 8"x13", -2.6mm offset, 3pc Al Rim
ENGINE 2005 Honda CBR 600 RR
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student built, fuel injection, MoTeC M 400, fully sequential
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 11000
MAX TORQUE DESIGN (rpm) 9000
DRIVE TYPE Chain #520
DIFFERENTIAL Drexler Motorsports clutch pack limited slip differential, bias 2:1
COOLING Twin side pod mounted radiators with thermo-static controlled electric fans
BRAKE SYSTEM 4-Disk system, floating mounted rotors with 240 mm diameter, brake balance adjustable, dual piston calipers



We are proud to present our first Formula Student car: The F0711-1. The old saying "To finish first, you first have to finish" drafts our aim. "Rennteam Uni Stuttgart e.V." was founded in May 2005 by students from different subject areas: Automotive engineering, aerospace engineering, technology management, material science and business administration. We are now 31 active members.

Working on the car until sunrise, spending sometimes even more time on it than on studying – this can only be done with verve and the preception that creating such a car means a great prospect. Each and every team member can gather valuable experience. Some team members can do their seminar papers on their personal task within the team.

The backbone of our car is a tubular steel frame with a fiberglass bodywork. This guarantees light weight at manageable costs. We have chosen a motorcycle engine because they are produced in considerable amounts and are proven and tested on both road and track.

Swansea

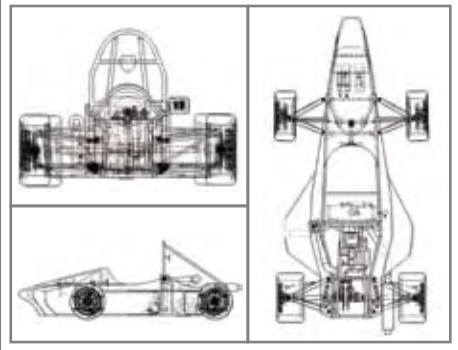
Swansea University, United Kingdom



Swansea University Race Engineering look forward to competing in Formula Student Germany shortly after participating in the British 2006 event. After the success of our second year car, S4b, at the British event in 2005, we have a new team and a new vehicle to race with this year. Combining 10 team members from electrical, mechanical and product design engineering, we will be looking for our third class win since first competing in Formula Student 2001. This will be only the third fully new car from Swansea University but after winning class 3 at FS2003 and class 1(200) at FS2005, we are going for victory in class 1 at FS2006. Participation in FS Germany will be a welcome bonus to many of the team who will be graduating in the summer. Still keeping our competitive spirit, we aim to enjoy the European experience but also to go for victory in Germany too.

Car 88

FRAME CONSTRUCTION Full aluminium honeycomb monocoque
MATERIAL 19.1mm thickness 3003 aluminium core, hexcel size 5.2-1/4N, 0.5mm 5251 aluminium skins
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2340 / 1160 / 1000
WHEELBASE (mm) 1700
TRACK (Fr / Rr) (mm) 1250 / 1170
WEIGHT WITH with 68kg DRIVER (Fr / Rr) 138 / 140
FRONT & REAR SUSPENSION Unequal length A-Arms. Pull rod actuated Risse Racing Technology spring/damper units
TYRES (Fr / Rr) 6.5/20x13 Goodyear Eagle, R065 compound / 8/20x13 Goodyear Eagle, R065 compound
WHEELS (Fr / Rr) Barnby Engineering alloy 6.5"x13" with cast magnesium alloy centres and machined alloy rims. 34.5mm negative offset / 8"x13". 59mm negative offset
ENGINE Husqvarna TC510
BORE / STROKE / CYLINDERS / DISPLACEMENT 97mm / 67.8mm / 1 cylinder / 501cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student des/built, fuel injection, using DTA ECU
FUEL 98 octane unleaded gasoline
MAX POWER DESIGN (rpm) 8000
MAX TORQUE DESIGN (rpm) 7000
DRIVE TYPE 520 pitch chain
DIFFERENTIAL AP Racing Suretrac differential
BRAKE SYSTEM 3-Disk system, solid mounted rotors with 250 mm diameter, brake balance adjustable, two piston calipers



Sydney

University Of New South Wales, Australia

Car 63

FRAME CONSTRUCTION Front: Monocoque, aluminium honeycomb sandwich panels with bonded and riveted sheet aluminium brackets. Rear: CrMo steel tube space-frame.

MATERIAL Front: 0.3mm Aluminium 5005-H38 skins with 0.4mm 6061-T6 brackets; Rear: CrMo 4130 tube

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2510 / 1358 / 1150

WHEELBASE (mm) 1669

TRACK (Fr / Rr) (mm) 1200 / 1150

WEIGHT WITH 68kg DRIVER (Fr / Rr) 125 / 147

FRONT & REAR SUSPENSION Unequal length and non-parallel A-Arms. Pushrod actuated spring/damper unit

TYRES (Fr & Rr) Avon A45 13" x 6.2"

WHEELS (Fr & Rr) Alluminium alloy 13" x 6.5"

ENGINE 1998 Yamaha YZF-R6

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 600cc

COMPRESSION RATIO 12.4:1

FUEL SYSTEM Student designed/built sequential port fuel injection controlled by Motec M4

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 12000

MAX TORQUE DESIGN (rpm) 8000

DRIVE TYPE Chain #520

DIFFERENTIAL Zexel Torsen University Special, Bias ratio 2.8:1, with option to be locked

COOLING Side-pod mounted radiator with electric fan controlled by engine management

BRAKE SYSTEM 3-Disk system, rotors with 220 / 280 mm diameter, brake balance adjustable, single piston calipers

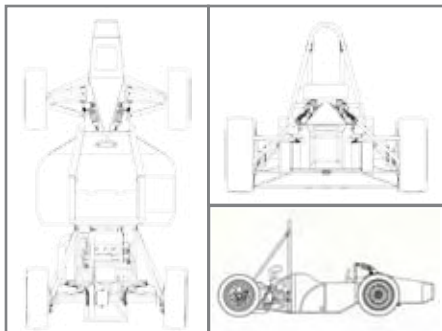


The University of New South Wales formula SAE team is known as Redback Racing. The team was established in 2000, in which the team competed in the inaugural Australian SAE competition. The teams number '63' symbolizes the year that the School of Mechanical and Manufacturing Engineering was founded at the University of New South Wales.

The team comprises of members from all degrees ranging from marketing to naval architecture. All members have a passion for the sport and participate on both promoting the car and the team as well as designing new concepts for each competition.

Over the years Redback racing have produced numerous victories across all parts of the competition. Overall victory was achieved in 2000, with presentation victories in 2002 and wins in both endurance and fuel economy events.

Redback racing looks to Germany as a new frontier on which to leave its mark upon as well as a chance to combat the new challenges of competing overseas and against international opposition which will be the ultimate test of Redback Racings competitiveness.



Ulm

University of Applied Sciences Ulm, Germany



On 13. October 2005 met at the University of Applied Sciences Ulm 10 students to discuss over a participation at the "Formula student" competition. Already two weeks later, could be inspired over 30 people of the fields automotive engineering, automotive electronics, production engineering, mechanical engineering and industrial engineering for the project.

In order to give the project a legal form, we created the association "Einstein automotive e.V.". Under its roof, we want to carry out diverse projects of the automotive industry. The most important of it is our Formula student project „Einstein motorsport“. Einstein motorsport is organisationally divided into the ranges technology and economics. The range economics contain supporting activities like raise funds. The technical team is responsible for the construction and build the car. It is our ambition to be one of the best newcomers in Hockenheim. On a long-term basis we will fight for victories.

Car 17

FRAME CONSTRUCTION Hybrid Construction (front: steel tubing, rear: solid square bar aluminum)

MATERIAL Front: 1.7734 - 15CDV6 round tubing, 10 to 25 mm in dia.; Rear: 3.4365 - F53, 20 mm in dia

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2970 / 1438 / 1063

WHEELBASE (mm) 1700

TRACK (Fr / Rr) (mm) 1243 / 1227

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 145 / 175

FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper

TYRES (Fr / Rr) 160/530-R13 Avon A40 / 180/530-R13 Avon A45

WHEELS (Fr / Rr) 6 inch wide, 3pc Al Rim, 10.8mm neg. offset / 8 inch wide, 3pc Al Rim, 2.6mm neg. offset

ENGINE 1997 Suzuki GSX-R600

BORE / STROKE / CYLINDERS / DISPLACEMENT 65.5mm / 44.5mm / 4 cylinder / 600cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Standard fuel lines

FUEL 95 octane unleaded gasoline

MAX POWER DESIGN (rpm) 14000

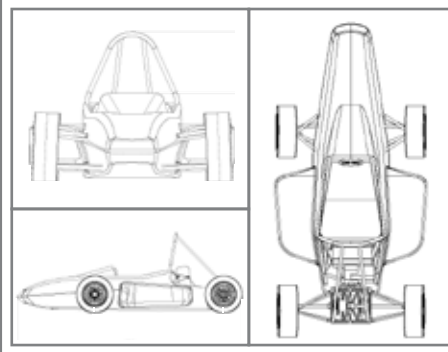
MAX TORQUE DESIGN (rpm) N/A

DRIVE TYPE Chain

DIFFERENTIAL Torsen T1, limited slip, 3:1 bias ratio

COOLING Original radiator with extended pipings, radiator location: in casing on the right side of the driver

BRAKE SYSTEM 4-Disk system, solid mounted rotors with 190 / 180 mm diameter, brake balance adjustable, four piston calipers

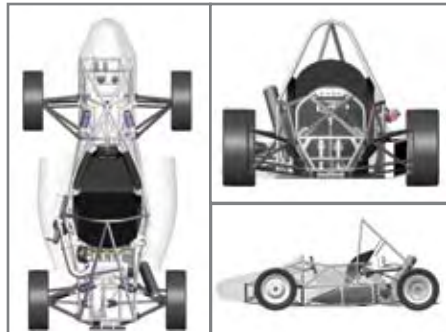


Windsor

University of Windsor, Canada

Car 56

FRAME CONSTRUCTION Tubular space frame
MATERIAL 1020 and 4130 Cond-N steel round tubing
 .750" to 1.000" OD
OVERALL LENGTH / WIDTH / HEIGHT (mm) 2667 / 1397 / 1092.2
WHEELBASE (mm) 1701.8
TRACK (Fr / Rr) (mm) 1231.9 / 1193.8
WEIGHT WITH 68kg DRIVER (Fr / Rr) 170 / 208
FRONT SUSPENSION Double unequal length A-Arm.
 Push rod actuated coil over damper. Damper oriented parallel to vehicle center line
REAR SUSPENSION Double unequal length A-Arm. Push rod actuated coil over damper. Damper oriented perpendicular to vehicle center line
TYRES (Fr & Rr) 20x6.5-13 Goodyear [R065]
WHEELS (Fr / Rr) 6.5 inch wide, 3pc Al Rim, 2 inch -ve offset / 6.5 inch wide, 3pc Al Rim, 2 inch +ve offset
ENGINE 2003 Honda CBR F4i
BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc
COMPRESSION RATIO 12:1
FUEL SYSTEM Student design/built, EFI
FUEL 95 octane unleaded gasoline
MAX POWER DESIGN (rpm) 9700
MAX TORQUE DESIGN (rpm) 8000
DRIVE TYPE O-ring chain
DIFFERENTIAL Honda Suretrac ATV, limited slip
COOLING Side pod mounted radiator with thermostatic controlled electric fan
BRAKE SYSTEM 3-Disk system, floating mounted rotors with 250 / 230 mm diameter, brake balance adjustable, dual piston calipers



The University of Windsor Lancer Racing team is made up of 18 students from the automotive/mechanical and materials disciplines of engineering offered. The team has been competing in the Formula SAE competition since 2001. This year we had the best showing ever for Lancer Racing, 26th place overall. We feel that it was due to a strong participation from all team members throughout the entire project. All of the members have grown over the last year and now contain the knowledge to do well on this race team.

The design of the FW-06, together with the knowledge gained over the last 5 years, has converged into a very competitive car. The team integration within FW-06 has made an outstanding formula in itself. We are hoping to represent Canada well by placing in the top of the pack in Formula Student Germany.



The latest Formula Student Car WR02 has been designed in less than six months.

This is the second car the U.A.S. Braunschweig/Wolfenbüttel team created. After analysing the previous car several issues have been detected. Weight reduction, stiffer frame, simpler suspension adjustments and maintenance are only some points on our improvement list.

Only a development of a new car was logical. A different team organization helped realizing to manufacture nearly every part in our own workshop. CAM methods, after drawing every part with the help of PTC Pro Engineer CAD software, helped minimize manufacturing time. The new demands of virtual analysis in the automotive industrie motivated the Students to implement FEM calculations.

All Student team members are highly motivated and keen to improve the last year's result. We welcome you to stop by at our booth while walking through the pit lane. Full throttle!

Car 33

FRAME CONSTRUCTION Front and rear tubular space frame, integrated side pods, integrated suspension

MATERIAL St37 R4 steel round tubing 16mm to 25mm dia. at 1mm to 2.5mm wall thickness/St37 R4 squared tubing

OVERALL LENGTH / WIDTH / HEIGHT (mm) 2950 / 1398 / 1130

WHEELBASE (mm) 1750

TRACK (Fr / Rr) (mm) 1200 / 1150

WEIGHT WITH with 68kg DRIVER (Fr / Rr) 158 / 158

FRONT & REAR SUSPENSION Double unequal length A-Arm. Push rod actuated horizontally oriented spring and damper

TYRES (Fr / Rr) Hoosier 20.5x6.0-13 R25A / Hoosier 20.5x7.0-13 R25A

WHEELS (Fr / Rr) 6 inch wide, 3pc Al Rim, 35mm neg. offset / 7 inch wide, 3pc Al Rim, 10mm neg. offset

ENGINE 2003 Honda CBR 600, PC35

BORE / STROKE / CYLINDERS / DISPLACEMENT 67mm / 42.5mm / 4 cylinder / 599cc

COMPRESSION RATIO 12:1

FUEL SYSTEM Student des/built, programmed fuel injection, sequential

FUEL 98 octane unleaded gasoline

MAX POWER DESIGN (rpm) 9000

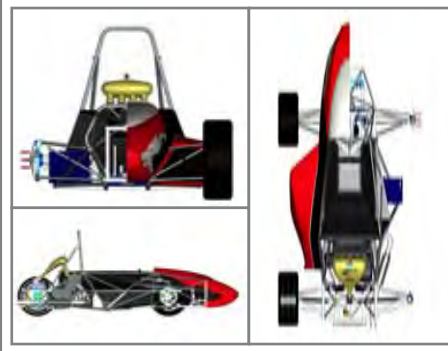
MAX TORQUE DESIGN (rpm) 8000

DRIVE TYPE Chain drive, chain 5/8"

DIFFERENTIAL Torsen T1, 3.2:1 bias ratio

COOLING Twin side pod mounted radiators

BRAKE SYSTEM 3-Disk system, floating mounted rotors with 240 / 280 mm diameter, brake balance adjustable, two piston calipers



Judges

Design Event

Bayer, Dr.-Ing. Bernward (Continental Automotive Systems Devison)
Becker, Dietmar (Porsche Motorsport)
Borchardt, Jan (Stihl)
Böttcher, Dr. Klaus (Bosch Motorsport)
Clarke, Pat (FSG Technical Advisor)
Crosby, Paul (Crosby Composites)
Daniel, Marc (Volkswagen AG)
Debus, Dirk (2D-Datarecording)
Deussen, Daniel (Weber Motor AG)
Dittrich, Rudolf (BMW Motorsport)
Erb, Dr. Thiemo (Porsche AG)
Gill, Adrian (Imperial College London)
Goddard, Geoff (Goeff Goddard Engines)
Greco, Mario (BMW AG)
Hermann, Jesko (Bertrandt AG)
Hickson, Alex (INSYS Limited)
Kock, Jörg (Continental AG)
Lechner, Rainer (Lechner Engineering)
Matawa, Rob (TÜV SÜD Automotive GmbH)
Meier, Thomas (Porsche Motorsport)
Nowicki, Daniel (BMW AG)
Pint, Siegfried (BMW Motorsport)
Powel, Derek (Honda Formula 1)
Powers, Craig (Power Control Services)
Riefstahl, Dominique (BMW Motorsport)
Rieke, Johannes (TU Braunschweig, Aircraft Design & Lightweight Structures)
Scharpe, Dieter (TÜV SÜD Automotive GmbH)
Schick, Bernhard (TÜV SÜD Automotive GmbH)
Schmidt, Stefan (IAV GmbH)
Schneider, Thomas (Volkswagen AG)
Smeal, Andrew Michael (RMIT University Melbourne)
Stammen, Karsten (Volkswagen AG)
Staniforth, Allen (Terrapian Services)
Sturm, Michael (Helmut Schmidt University Hamburg)
Wartenberg, Knut (TÜV SÜD Automotive GmbH)
Wizgall, Eberhard (Weber Motor AG)

Cost Event

Ankert, Detlef (Kautex Textron GmbH & Co. KG)
 Bantleon, Dieter (Süßen)
 Fleckenstein, Franz (Linde AG)
 Frommholz, Dirk (Volkswagen AG)
 Geldmann, Udo (Festo AG & Co. KG)
 Grundner, Harald (InnoVAVE)
 Kaiser, Hartmut (Wilhelm Karmann GmbH)
 Lukoschek, Marian Paul (Adam Opel GmbH)
 Müller, Jens (Bombardier Transportation Germany GmbH & Co. KG)
 Scharff, Dr. Robert (DaimlerChrysler AG)
 Schoon, Jürgen (TEC'n ECO)
 Steinmeier, Frank (Continental Automotive Systems Division)
 Supp, Udo (Linde AG)
 Unger, Herbert (WABCO Vehicle Control Systems)

Presentation Event

Barthel, Julia (Wunderman)
 Bienert, Prof. Dr. Margo (FH Nürnberg)
 Dechow, Dagmar (Linde AG)
 Esser, Dr. Klaus (Kautex)
 Holz, Patrick (Wiesbaden)
 Jagusch, Susanne (DaimlerChrysler AG)
 Neichel, Andreas (CSC)
 Preil, Cornelius (Deutz AG)
 Preiss, Anne (Procter & Gamble)
 Samak, Michael (Saatchi & Saatchi)
 Schüssler, Onno (Linde AG)
 Sendzik, Thomas (DaimlerChrysler AG)
 Voigt, Michael (DBV Winterthur)
 von Hugo, Christoph (DaimlerChrysler AG)
 Wenzel-Lux, Dr. Friedrich (Linde AG)

Style Event

Kelly, Prof. James (FH Pforzheim)
 Maronde, Roberto (DaimlerChrysler AG)

Formula Student Germany Team

Steering Committee

The Steering Committee plans and designs the Formula Student Germany competition. Its members have all made their own experiences with Formula Student during their studies.



Tim Hannig

Chair of the Steering Committee,
Presentation Event



Frank Röske

Vice-chair of the Steering Committee,
Design Event, Rules



Jan Helbig

Cost Event



André Schmidt

Scrutineering



Peter Jakowski

Scoring, Time Keeping



Ulf Steinfurth

Scrutineering



Rainer Kötke

Dynamics

Staff



Daniel Ahrens

Event Control



Daniel Mazur

Chief Executive
Event Manager



Christine Baur

Public Relations



Birgit Pattberg

Public Relations



Matthias Brutschin

Event Support



Dr. Ludwig Vollrath

Secretary of the
VDI Society for Automotive and
Traffic Systems Technology

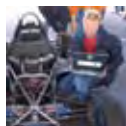
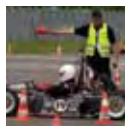


Impressions of the Pre-Event 2006

Aschersleben and Leipzig



More pictures on <http://www.formulastudent.de/events/pre-event-2005/gallery/>



Formula Student Germany

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