

ENGLAND
OXFORD BROOKES UNIVERSITY

Oxford Brookes ISIS07 has been designed and built by over 40 students. This is the seventh year the university has competed in FS and FSAE events.

This year's car is a direct evolution from last year's, being a tubular steel space-frame with semi-stressed Triumph Daytona 600cc engine, incorporating a student designed dry sump. However, under the skin there have been many detail design changes. The team have used a mass analysis program developed by the simulation group to steer the design team on packaging and fundamental chassis design.

The team will be carrying out a tyre test using Hoosiers, Goodyears and Avons, and

standard test data will be backed up with an infrared thermal imaging camera.

The suspension installation and packaging has been analysed using ADAMS, looking into, for example: suspension rates, camber gains, vehicle vibrations and Ackermann angles.

The car has a student designed and built Canbus electrical wiring harness, integrating seamlessly with the Motec M800. This has reduced wiring mass and increased logging capacity.

The team have further refined the two pedal layout with an integrated clutch/gear lever. This year's system is utilising a push/pull cable for gear actuation, hydraulic clutch



actuation and moved to rear brake hard line.

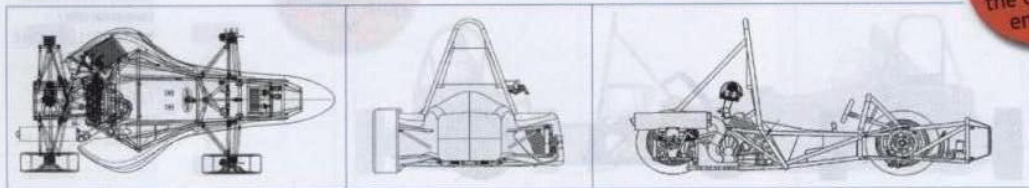
Continued development on the innovative Spike throttle and intake system includes low end idle, fuel consumption and an overhaul of the cooling system.

Evolution process: Many detail changes from the successful ISIS car of 2006

31st
in FSAE '07 as
the only UK
entrant

**TECH SPEC
CAR 3**

Length, width, height, wheelbase 2,750mm, 1,397mm, 1,168mm, 1,570mm
Track (front / rear) 1,200mm/1,500mm
Weight incl 68kg driver (front / rear) 120.9kg / 142.5kg
Suspension (front / rear) Double unequal length A-arm. Pull / push-rod and rocker actuated spring over damper with ARB
Tyres (front / rear) Not decided at time of entry
Wheels (front / rear) 6.5x13, 22.5mm offset, 3 pc: span Al rim with Mg centre
Brakes (front / rear) Floating, cast iron (GG40), hub mounted, 220 mm diameter, cross drilled
Frame C350 mild steel tube space frame, TIG welded, with bonded aluminium honeycomb floor panel.
Engine Triumph 2005 Speed Four
Bore / stroke / cylinders / cc 68mm / 41.3mm / 4 / 599cc
Compression ratio / induction 12.75:1 / naturally aspirated
Fuel Shell V-Power
Max power / max torque 97.5hp@12,000rpm / 51 lb-ft between 5,000 and 11,000rpm
Drive / differential / final drive ratio Chain / Quaife ATB, student modified / 4.3:1



**TECH SPEC
CAR 86**

Length, width, height, wheelbase 2,590mm, 1,414mm, 1,247mm, 1,525mm
Track (front / rear) 1,050mm/950mm
Weight incl 68kg driver (front / rear) 116kg / 164kg
Full wet weight 190kg
Suspension (front / rear) Unequal length A-arms. Fox DHX 5.0 spring/damper units.
Tyres (front / rear) 160/530 -13" Silverstone FTZ Sport Slick
Wheels (front / rear) Gloria cars 13" x 152.4mm 6mm neg offset, AISI7Mg Al alloy
Brakes (front / rear) 208.5 / 256mm dia contour S224RD drilled disc.
Frame Chromoly 4130 steel tube space frame with bolted carbon fibre floor panels. TIG welding.
Engine 2003 Yamaha XT600E
Bore / stroke / cylinders / cc 99mm / 84mm / 1 / 595cc
Compression ratio / induction 12.5:1 / atmospheric
Fuel 98 octane unleaded
Max power / max torque 8,000rpm / 6,000rpm
Drive / differential / final drive ratio Chain / Zexel Torsen university special / 3.5

GREECE
PATRAS, UNIVERSITY OF



Teamwork in action: The first Greek car in Class One at FS

After successful participation in FS2006 in class 2 and winning the Design and Overall awards, this year our team aims to manufacture a reliable yet competitive car.

Our team consists of nine members, mainly

3rd and 4th year engineering students. The team members form five major groups (chassis, engine, suspension, drivetrain and brakes) and the marketing and PR team. The small team forces us to undertake more responsibilities and tasks and ensures better flow of information around the team.

A tubular spaceframe has been designed to meet targets for ergonomics, safety, performance, weight, packaging and cost.

The choice of Yamaha XT-600 engine offers low weight along with a magnificent torque output, an ideal quality for small and tight tracks. The conversion from carburettor to injection countered the limitation of 20mm air input and led to an increase of power

output of the original motorbike from 40bhp to 57bhp. This power output in addition with packaging all peripheral devices to the smallest possible dimensions and the low weight has resulted in a really manoeuvrable car.

In addition, vacuum assisted resin transfer moulding was used for all composite parts: intake, dashboard, bodywork, floorpanels. This resulted in high-quality-surface parts with minimum weight.

UoP racing team would like to specially thank University of Patras, Laboratory for Manufacturing Systems and Automation and all of its sponsors for their valuable technical and financial support.

2
times Patras
has won Class
Two

