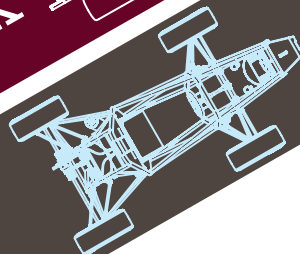
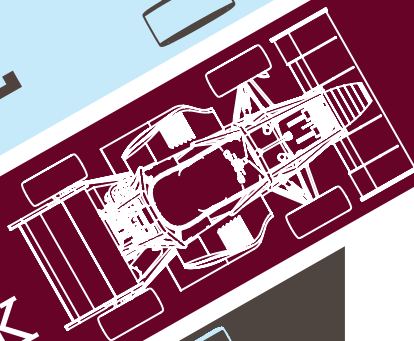
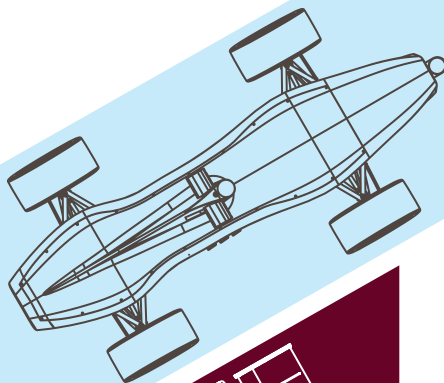


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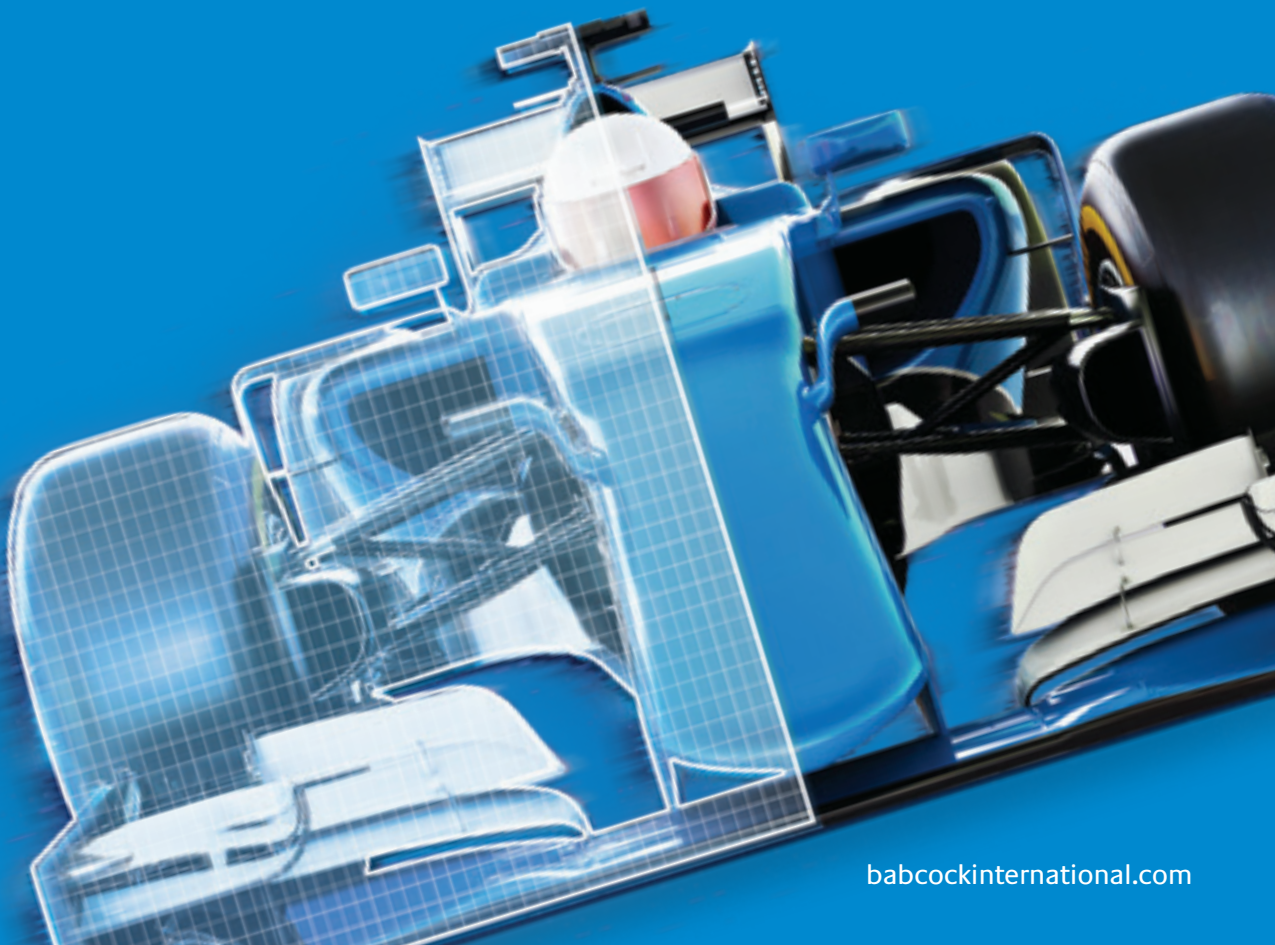
High Performance Powertrains



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# Innovating at speed.

We're proud to be the AI partners to the innovators, creators and go-getters at **Formula Student 22** and wish every competitor the very best of luck.



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## Officials

**Patron** Ross Brawn OBE FIMechE  
**Ambassadors** Mike Gascoyne, James Allison, Leena Gade, Paddy Lowe, Dallas Campbell, David Brabham, Willem Toet  
**Chairman** Dr Andrew Deakin FIMechE  
**IMechE Senior Projects Executive** Naomi Rolfe  
**Operations Manager** Neil Carr-Jones, Goose Live Events  
**Operations Coordinator** Georgina Burden, Goose Live Events  
**Event Safety Advisor** Ben Harding, DB Safety  
**Press Officer** Margaret-Anne Orgill  
**Chief Judge** Dan Jones  
**Head Design Judge** Neill Anderson  
**Head Cost and Manufacturing Judge** John Dangerfield  
**Head Business Plan Presentation Judge** Rob Wild  
**Head FS-AI Judge** Holly Watson Nall  
**Chief Technical Scrutineer** Alex Darvill  
**Clerk of the Course** Rob Adaway  
**Deputy Clerk of the Course** Lynne Spurr  
**Chief Marshal** Peter Harding  
**Deputy Chief Marshal** Elaine Brice  
**Motorsport UK Chief Scrutineer** Chris Baker  
**Motorsport UK Scrutineers** Steve Spurr, Kenn Almond, Peter Urwin, Kevin Peake, Bob Blackmore  
**Marshals** British Motorsports Marshals Club, 750 Motor Club and Silverstone Marshals Club  
**Results** Dr Andrew Deakin FIMechE, Joe Staton

## Rules of engagement

Despite the organisers taking all reasonable precautions, unavoidable accidents can happen. In respect of these, we must make clear the rules of engagement for all participants and visitors. Motorsport may be dangerous and persons attending this event do so entirely at their own risk. It is a condition of admission that all persons having any connection with the organisation and/or conduct of the event, including owners of the land and the drivers and owners of the vehicles are absolved from all liability arising out of accidents, howsoever caused, resulting in damage and/or personal injury to spectators, pass and ticket holders, or their goods and vehicles.

This event is held under the General Regulations of the MSA (incorporating the provisions of the International Sporting Code of the FIA), the Formula Student Rules and Regulations, Final Instructions and any written instructions that the organisers issue for the event.

MSA Permit COE 124452.



Wednesday 6 July 2022		
Time	Activity	Location
07:30	Exhibitor sign-in	Car Park 49 Ticket Office
08:00	Exhibitors access to Paddock	National Paddock
08:00-16:00	Accreditation Centre open for any issues with e-tickets	Car Park 49 Ticket Office
09:00	Holding area open for FS teams	Car Park 49 Ticket Office
09:00-19:00	FS-AI 'early track shape' practice area open	Medical Car Park
10:00	FS-AI teams permitted access to National Paddock subject to completing the arrival registration procedure in Car Park 49	Car Park 49
12:30	Onsite briefing for Sponsors, scanner sign out and demo	Pavilion
14:00-17:30	Team Registration	Pavilion
14:00-22:00	Site open to Formula Student teams - last admission 22:00	Gate 19 (Main Entrance)
14:00-00:00	Campsite access gate open	Gate 5 (next to UTC)
14:00-18:00	Access to National Paddock for team support vehicles	National Paddock
14:00-18:00	Information Point open	Underneath Race Control
16:00-18:00	EV Garage tours for EV Safety Team and H&S Officer	Garages
18:30-20:00	Opening Ceremony	Pavilion
23:00	Site closes	

Thursday 7 July 2022		
Time	Activity	Location
07:00-15:00	Accreditation Centre open	Car Park 49 Ticket Office
07:00-20:00	Pit Stop Café Open	National Paddock
07:00-23:00	Site open to Accreditation holders - last admission 22:00	Gate 19 (Main Entrance) and Gate 5 (from Campsite)
	<b>Silverstone Security to check accreditation - students without a wristband must report to Accreditation Centre</b>	



08:00-18:00	Information Point open	Underneath Race Control
08:30-18:30	EV Charging open	Garage 12 A-C
09:00-12:00	<b>FS-AI practice area open</b>	Medical Car Park
09:00-18:00	Technical Scrutineering / Motorsport UK Scrutineering	Scrutineering Ba
09:00-18:00	EV Safety Scrutineering	Garage 12 D&E
09:00-18:00	<b>FS and Concept Class Engineering Design and Cost &amp; Manufacturing judging</b>	Pavilion
09:00-18:00	<b>FS, Concept &amp; FS-AI Business Plan Presentation judging</b>	Silverstone UTC
09:00-18:00	<b>FS-AI Design Real World AI &amp; Simulation Development judging</b>	Pavilion
14:00-18:00	Fuel open	Support Paddock 1
14:00-18:00	Tilt table	Support Paddock 1
14:00-18:00	Noise Test	Support Paddock 1
15:00-18:00	Brake Test	Support Paddock 1
18:30	Concept Class Team Photo	Start/Finish Straight
23:00	Site closes	
00:00	Campsite access gate closes	Gate 5

## Friday 8 July 2022

Time	Activity	Location
07:00-15:00	Accreditation Centre open	Car Park 49 Ticket Office
07:00-23:00	Site open to Accreditation holders - last admission 22:00	
	<b>Silverstone Security to check accreditation - students without a wristband must report to Accreditation Centre</b>	Gate 19 (Main Entrance) and Gate 5 (from Campsite)
08:00-18:00	<b>Information Point open</b>	Underneath Race Control
07:30-18:00	Pit Stop Café Open	National Paddock
08:00-18:00	Technical Scrutineering / Motorsport UK Scrutineering	Scrutineering Bay
08:00-18:00	EV Safety Scrutineering	Scrutineering Bay
08:30-20:30	EV Charging open	Garage 12 A-C
09:00-12:15	Sim Racing Qualifying Sessions	Online
09:00-18:00	Welding and Hot Works available	Garage 6

01. Competition timetable

09:00-18:00	FS-AI Practice Area Open	Medical 6
09:00-18:00	Practice Area open for FS teams	Centre Car Park 1
09:00-18:00	Fuel open	Support Paddock 1
09:00-18:00	Tilt table	Support Paddock 1
09:00-18:00	Brake test	Support Paddock 1
09:00-18:00	Noise test	Support Paddock 1
09:00-18:00	<b>FS and Concept Class</b>	Pavilion
	<b>Engineering Design and Cost &amp; Manufacturing judging</b>	
09:00-18:00	<b>FS, Concept &amp; FS-AI Business Plan Presentation judging</b>	Silverstone UTC
09:00-18:00	<b>FS-AI Design, Real World AI &amp; Simulation Development judging</b>	Pavilion
09:20-17:00	Sim Racing activities (pre-registered participants only)	Virtual Reality Racing Club
11:00-18:00	Skid Pad Event - FS-AI teams	Centre Car Park 1
18:00-18:45	All team event photo	Start/Finish Straight
19:00-20:00	Faculty Advisors and Team Leaders' 2023 Briefing	Pavilion
23:00	Site closes	
00:00	Campsite access gate closes	Gate 5

Saturday 9 July 2022		
Time	Activity	Location
07:00-13:00	Accreditation Centre open	Car Park 49 Ticket Office
07:00-23:00	Site open to Accreditation holders - last admission 19:30	
	<b>Silverstone Security to check accreditation - students without a wristband must report to Accreditation Centre</b>	Gate 19 (Main Entrance) and Gate 5 (from Campsite)
07:30-18:00	Pit Stop Café Open	National Paddock
07:45-08:30	Driver briefing for Dynamic events	Pavilion
08:00-18:00	Information Point open	Underneath Race Control
08:00-18:00	Technical Scrutineering / Motorsport UK Scrutineering	Scrutineering Bay
08:00-18:00	EV Safety Scrutineering	Garage 12 D&E
08:00-18:00	Fuel open	Support Paddock 1

08:00-18:00	Tilt table	Support Paddock 1
08:30-20:30	EV Charging open	Garage 12 A-C
09:00	Commentary begins	National Paddock
09:00-12:00	<b>Sprint Event - FS-AI teams</b>	Brooklands Corner
09:00-12:00	<b>Acceleration Event - FS teams</b>	National Pit Straight
09:00-12:00	<b>Skid Pad Event - FS teams</b>	Centre Car Park 1
09:00-18:00	Welding and Hot Works available	Garage 6
09:00-18:00	Brake test	Support Paddock
09:00-18:00	Noise test	Support Paddock
09:00-18:00	Practice Area open for FS teams	Wellington Straight
09:00-18:00	FS-AI Practice Area open	Medical Car Park
11:00-14:00	Walk of Sprint Course - FS teams	Copse Corner
12:00-12:30	<b>Acceleration Event Top 6 run off – FS Teams</b>	National Pit Straight
13:00-14:00	<b>FS and Concept Class Business Plan Presentation final</b>	Pavilion
13:00-14:00	<b>Business Plan Presentation final</b>	Pavilion
13:00	Concept Class Cost & Manufacturing results and FS-AI static events Provisional Results posted. Concept Class Engineering Design provisional results posted	Information Point (underneath Race Control) and Online
14:00-18:00	<b>Sprint Event - FS teams</b>	Copse Corner
14:00-18:00	<b>Acceleration Event - FS-AI teams</b>	National Pit Straight
17:00	Formula Student Class Cost & Manufacturing & Manufacturing and Engineering Design provisional results posted Concept Class Design Results posted	Information Point (underneath Race Control) and Online
18:00-19:00	<b>FS Class Cost &amp; Manufacturing final</b>	Pavilion
19:00-20:00	<b>FS Class Engineering Design final</b>	Pavilion
20:15-21:30	Awards Ceremony Part 1	Pavilion
23:00	Site closes	
00:00	Campsite gate closes	Gate 5

Sunday 10 July 2022		
Time	Activity	Location
07:00-13:00	Accreditation Centre open	Car Park 49 Ticket Office
07:00-23:00	Site open to Accreditation holders - last admission 19:30	
	<b>Silverstone Security to check accreditation - students without a wristband must report to Accreditation Centre</b>	Gate 19 (Main Entrance) and Gate 5 (from Campsite)
07:30-18:00	Pit Stop Café open	National Paddock
07:45-08:30	Driver Briefing for Endurance	Pavilion
08:00-18:00	Information Point open	Underneath Race Control
08:00-10:00	Walk of Endurance Course - All Endurance drivers to attend	Copse Corner
08:30-16:30	EV Charging open	Garage 12 A-C
09:00	Commentary begins	National Paddock
09:00-18:00	Fuel open	Support Paddock 1
09:00-12:00	Technical Scrutineering / Motorsport UK Scrutineering	Scrutineering Bay
09:00-12:00	EV Safety Scrutineering	Garage 12 D&E
09:00-14:30	Practice Area open for FS teams	Wellington Straight
09:00-14:30	Brake test	Support Paddock 1
09:00-14:30	Tilt table	Support Paddock 1
09:00-14:30	Noise test	Support Paddock 1
09:00-16:00	<b>FS-AI Track Drive</b>	Brooklands Corner
10:00-16:00	<b>Endurance Event for FS teams (including lunch break)</b>	Copse Corner
10:30-16:00	Parc Ferme open	Scrutineering Bay
TBC	Lunch break for Endurance	
11:00	Concept Class Engineering Design results posted	Online

16:00	Soft de-rig: Exhibitors may begin packing down Note: Contractor/Exhibitor vehicles not yet allowed on site	National Paddock
19:30	Garages clear (All teams must be completely clear of pits)	Garages
20:00-22:00	Final Awards and Closing Ceremony sponsored by MathWorks	Pavilion
23:00	Full event results posted online	Online

---

Please note this timetable is subject to change.  
Any amendments will be posted on the Official Noticeboard outside Race Control.



## DR ALICE BUNN OBE FIMECHE

CEO, INSTITUTION OF  
MECHANICAL ENGINEERS

### Welcome to Formula Student 2022

I would like to welcome you to Silverstone for the return of our Formula Student competition.

Formula Student is IMechE's biggest competition, and I am looking forward to seeing so many teams from the UK and overseas back out on the track.

My first visit to Formula Student was last year, only a few weeks after I joined IMechE, and it was a much smaller hybrid event. That it took place at all is a testament to the enthusiasm of many young engineers and volunteers who overcame challenging circumstances.

I know you will be keen to see the full event taking place again – we're expecting over 130 teams so the garages will be bustling, and a new generation of cars will be out on the track.

It's exciting to see our autonomous vehicles competition going from strength to strength with over 15 teams registered this year, a record for the event and demonstrates the increasing interest in learning these technologies.

For IMechE, competitions like Formula Student are incredibly important as they give engineering students a chance to work on a "real life" project and develop the skills they will need to move ahead in their engineering careers.

Future Transport is one of our policy priorities and technology which we see at Silverstone today could be on our roads in the future, as students apply and develop the knowledge gained from their experience here. Our values of impact, inclusivity, integrity and innovation are all very well showcased here today at Silverstone too, which is fantastic to see.

It will be wonderful to see spectators return to watch the excitement and for young people to have a chance to see engineering in action and find out for themselves where a career in engineering can take them.

I would like to thank all the volunteers who help run Formula Student and without whose generous support and commitment, the competition could not take place.

I wish you all the best of luck and hope you enjoy the competition.

**Dr Alice Bunn OBE FIMECHE**

CEO, Institution of Mechanical Engineers







**ROSS BRAWN OBE HON FIMECHE**  
PATRON, FORMULA STUDENT

“““

Go fast,  
don't  
crash.

Ross Brawn OBE Hon FIMechE





## DR ANDREW DEAKIN FIMECHE

CHAIR, FORMULA STUDENT ORGANISING COMMITTEE

### Welcome to FSUK's 25th event.

After our first successful online and hybrid competitions in 2020 and 2021 respectfully, we are delighted to welcome everyone back to Silverstone for the 25th competition.

With restrictions now lifted and every garage bristling with teams once again, I will be eagerly looking forward to watching a new grid of cars. With half of those sporting electric powertrains, some for the first time, it will be exciting to see how teams have been overcoming the challenges associated with electric vehicles and their battery systems.

Similarly, I am excited by the increasing number of FS-AI teams joining this year, with more than a dozen teams using the competition as a real-world project to develop their skills in autonomous vehicle systems.

2022 also sports some new elements, most notably the mandatory inclusion of the expanded Lap Time Simulation event, which will encourage teams to develop vehicle dynamics in a virtual environment. Meanwhile, this Friday will see the finals of the inaugural FS Sim Racing Series take place, capping off what has been several months of fun, yet competitive racing for dozens of teams around the world.

At its core, the Formula Student competition continues to challenge young engineers to apply the knowledge gained through courses to a real-world engineering project. Whether in the development of the car or during the presentation and dynamic events at Silverstone, I hope you can be proud of all you have achieved and carry those key skills and experiences with you into the first years of your careers.

On behalf of the Organising Committee, we are grateful for the continued support of our event partners IAutodesk, IPG Automotive, Babcock International and Bentley and all our sponsors and Supporters.

Special thanks are also due for the extreme dedication of our growing army of volunteers and the Institution of Mechanical Engineers for continuing to support Formula Student. Without your time, experience and commitment, the event simply would not happen.

Whether you are a competition veteran or this is the first year of many, we hope you enjoy this year's competition, and from myself and the Organising Committee; the best of luck to all the teams.

**Dr. Andrew Deakin FIMechE**  
Chair, IMechE Formula Student







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# What is Formula Student?



The competition is split into two parts: static events, which test the team's business logic, design and costing skills, and dynamic events, which test the performance and durability of their vehicle.

Formula Student is Europe's most established educational engineering competition which uses motorsport to inspire students. Backed by industry and high-profile engineers such as Patron, Ross Brawn OBE, the competition aims to develop enterprising and innovative young engineers and encourage more young people to take up a career in engineering.

All students get a chance to demonstrate their technical, engineering design and manufacturing skills while meeting deadlines. Gaining experience in teamwork, time and project management, budgeting and more, students come out of the competition with valuable and practical skills that set them up for a bright career in engineering.

## THE CHALLENGE

The competition is split into two parts: static events, which test the team's business logic, design and costing skills, and dynamic events, which test the performance and durability of their vehicle.

The teams are tasked to produce a prototype for a single-seat race car for autocross or sprint racing and present it to a hypothetical manufacturing firm. The car must be high performance in terms of its acceleration, braking and handling qualities whilst being low in cost, easy to maintain and reliable. During the competition the teams must demonstrate the logic behind the proposal and must be able to demonstrate that it can support a viable business model with rigorous testing.

Developed with FS partners IPG Automotive, the now mandatory Lap Time Simulation event will also see students develop skills in developing vehicles using virtual testing techniques, further adding to their skills.

Growing each year, Formula Student – Artificial Intelligence (FS-AI) challenges student teams to develop an AI driver capable of controlling a vehicle through a series of real-world challenges. The competition is designed to evolve to keep pace with the skills requirements of the UK Autonomous vehicles and Artificial Intelligence sectors.

Teams compete across several event categories, including the requirement for the students to consider Real World Autonomous scenarios

Students have the option to design and run their own autonomous vehicle while developing their AI code. Alternatively, they may use the competition's purpose-built Autonomous Driving Systems Driverless Vehicle (ADS-DV), which has been developed by the IMechE with funding from the Centre for Connected & Autonomous Vehicles (CCAV) via Innovate UK.

### Scoring Breakdown

Points in brackets are maximum scores.

#### Formula Student Class

##### Static Events:

- Technical and Safety Scrutineering
- Tilt test, brakes and noise testing
- Engineering Design Event (160 points)
- Cost and Manufacturing Event (120 points)
- Business Plan Presentation Event (120 points)

##### Dynamic Events:

- Lap Time Simulation (20 Points)
- Skid Pad (75 points)
- Acceleration (75 points)
- Sprint (100 points)
- Endurance (250 points)
- Efficiency, measured during Endurance (100 points)

#### Concept Class

##### Static Events:

- Lap Time Simulation (40 points)
- Engineering Design Event (150 points)
- Cost & Manufacturing Event (150 points)
- Business Plan Presentation Event (120 points)

#### FS-AI

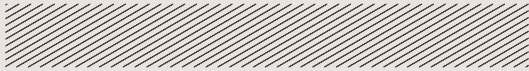
##### Static Events

- Business Plan Presentation Event (100 points)
- Real World AI (100 points)
- Engineering Design (150 points)
- Simulation Development (100 points)

##### Dynamic Events:

- Skid Pad (100 points)
- Acceleration (100 points)
- Autocross/Sprint (100 points)
- Trackdrive (250 points)

# Awards ceremonies timetable



The award ceremonies will take place in the Pavillion on Saturday and Sunday evenings to celebrate the amazing achievements and many memorable moments across the competition.

We invite you to join us to find out who will take home our prestigious awards!

## Saturday:

- Concept Class Engineering Design
- Concept Class Cost & Manufacturing
- Formula Student Acceleration Winner
- Formula Student Skid Pad Winner
- Formula Student Sprint Winner
- Craig Dawson Award - Most Valuable Team Member
- Racing Pride Aston Martin Diversity and Inclusion Award
- Formula Student Suzanne Royce Outstanding Contribution Award
- RACE TECH William Kimberley award
- Fastest Egress
- FS-AI Class Business Plan Presentation Winner
- FS-AI DDT Class Autonomous Design Winner
- FS-AI ADS Class Autonomous Design Winner
- FS-AI Class Real World AI Winner
- FS-AI Simulation Development Winner
- FS-AI DDT Class Overall Static Events Winner
- FS-AI ADS Class Overall Static Events Winner
- Sim Racing Winner

## Sunday:

- Formula Student Overall Winner
- Formula Student Runner Up
- Formula Student Third Place
- Bentley Overall Dynamic Events Winner
- Formula Student Endurance Award
- Formula Student Most Efficient Car
- Formula Student Overall Static Events
- Formula Student Engineering Design
- Formula Student Cost & Manufacturing
- McKinsey Business Plan Presentation
- Lap Time Simulation Formula Student Class
- Lap Time Simulation Concept Class
- Concept Class Overall Winner
- Allan Staniforth Award - Best Newcomer
- Faraday Institution Best Newcomer EV
- Formula Student Top Individual Driver
- Formula Student Most Cones Hit
- Formula Student Furthest Travelled Cone
- Formula Student Most Entertaining Driver
- Faculty Advisor Outstanding Contribution
- FS-AI DDT Class Overall Winner
- FS-AI ADS Class Overall Winner
- FS-AI Acceleration Winner
- FS-AI Skid Pad Winner
- FS-AI Sprint Winner
- FS-AI Endurance Winner
- FS-AI Overall Dynamic Events Winner

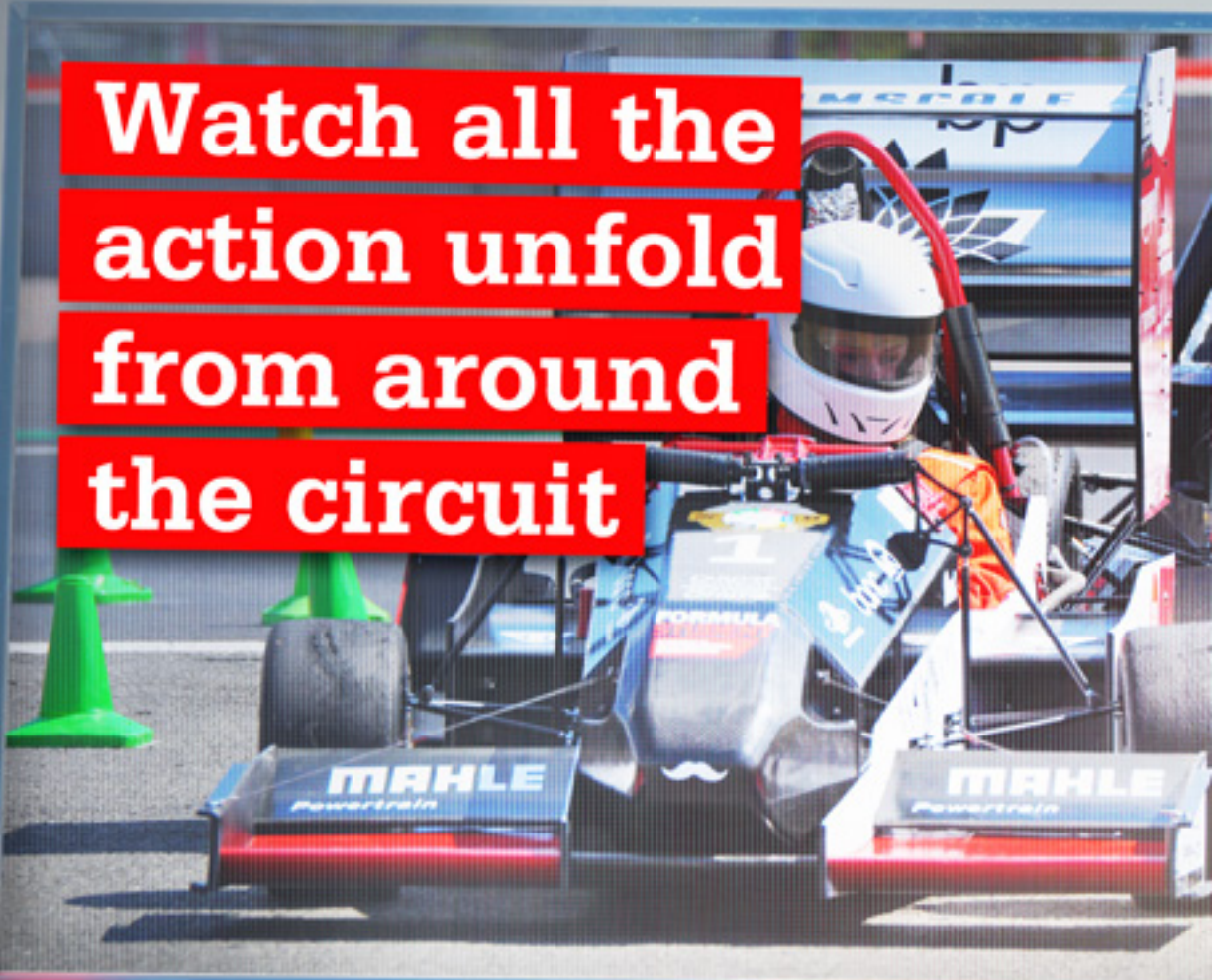




# FORMULA STUDENT

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fsimeche](http://www.youtube.com/fsimeche)**

Tell your friends  
who couldn't make  
it to check you  
out on track  
from home.



## Volunteers update



Hi! I'm Keith, Volunteers Manager for Formula Student. You'll see me around the paddock throughout the event so do say hi, particularly if you're a student interested in continuing your involvement with Formula Student beyond graduation or if you are a professional engineer and are interested in how you or perhaps your colleagues/business can support the competition.

Following a fully virtual event in 2020 and hybrid event in 2021 we've been really encouraged by the enthusiasm by so many engineering professionals to support the first fully live Formula Student event since 2019. When applications opened in January we were so pleased to see submissions from both experienced volunteers and brand new people willing to pay it forward and devote time to supporting the next generation of engineers.

Formula Student volunteers represent the best examples of lived IMechE values; Integrity, Inclusion, Impact and Innovation. At the Institution, we're so grateful to have such fantastic ambassadors for these values to help inspire the next generation to deliver our vision; improving the world through engineering.

Volunteer applications open each January each year. If you're keen to be notified as soon as applications go live, please email [keith.stocker@member.imeche.org](mailto:keith.stocker@member.imeche.org) or [fs@imeche.org](mailto:fs@imeche.org) and we'll keep you informed!

### Integrity

- Judges declaring conflicts of interest
- Impartiality of judging with diversity in judging teams and universal score sheets/scoring rubric for static events
- Motorsport UK permitted event with scrutineers and marshals (all volunteers) to support the live event and ensure compliance with best practices advised by UK governing body for motorsport
- All volunteers sign up to the IMechE's code of conduct at point of application

## Inclusion

- Mix of experienced and brand new volunteers across all functional areas
- Target of either matching or exceeding industry figures in terms of male/female split of volunteers
- Building relationships with institutions and bodies representing marginalised groups such as RacingPride and AFBE to promote volunteering opportunities
- Working with Motorsport UK on a programme to encourage more young people to pursue interests in motorsport scrutineering

## Impact

- Representation – ‘if you can see it you can be it’ – ensuring the diversity represented by global participants is reflected in our volunteer groups
- Support of the competition – without volunteers Formula Student simply wouldn’t happen
- Being allies and ambassadors for Formula Student – encouraging friends and colleagues to get involved, STEM ambassadors to encourage young people to pursue an engineering career pathway

## Innovation

- Organising Committee (volunteers) annual review of Rules and technical requirements to ensue relevance with industry and technological advancements

- Organising Committee and sub-groups of the Organising Committee dedicated to setting strategy for the competition in line with Institution’s policy priorities; Education, Future Transport, Environment, Infection Control

## Volunteers by numbers



**350** volunteers needed to make the event happen

Consumed during the event:



**6000** cups of tea and coffee



**1800** lunch bags



**900** packets of Haribo



**10** hours on average per day



**2000** hours dedicated to the competition annually by the Organising Committee

# AS LOUD AS QUIET CAN GET



## All-Electric Ford Mustang Mach-E GT

*Ford* | BRING ON  
TOMORROW

Model shown is a Mustang Mach-E GT. Fuel economy mpg (l/100km): Not applicable. CO<sub>2</sub> emissions while driving: 0g/km. Electric Range: up to 236 miles (WLTP Extra High) – 310 miles (WLTP Overall)\*.

These figures were obtained after the battery had been fully charged. The Mustang Mach-E is a battery electric vehicle requiring mains electricity for charging. The electric range shown was achieved using the WLTP new test procedure. Figures shown are for comparability purposes. Only compare fuel consumption, CO<sub>2</sub> and electric range figures with other cars tested to the same technical procedures. \*These figures may not reflect real driving results, which will depend upon a number of factors including the starting charge of the battery, accessories fitted, variations in weather, driving styles and vehicle load. WLTP Overall Range reflects a combined driving cycle and WLTP Extra High reflects motorway driving – both tests are conducted in controlled conditions with an ambient temperature of 23 degrees Celsius and no climate or electrical load.

[ford.co.uk](https://ford.co.uk)

SAVE THE DATE:



# Learn To Win 2023

Friday 4 November 2022

Manufacturing Technology Centre (MTC),  
Coventry

Learn to Win is the first date in the diary that kickstarts the new Formula Student season and brings together the event organisers, head judges, partners and teams to discuss the year ahead.

Whether you are involved in team management, design, fabrication or testing, Learn To Win will give you crucial insights into what the judges are looking for and how to improve every aspect of your car.

- › Understand the ruleset, with all the major changes and updates to stay compliant at FS2023
- › Be inspired by successes and avoid failures, whether IC, EV, hybrid or FS-AI
- › Speak directly with the judges involved in Static, Dynamic, FS-AI and Lap Time Simulation events and maximise your scoring
- › Get new team members up to speed and help returning members improve
- › Benchmark your car against other teams and take back new ideas
- › ...and much much more!

Following fully booked events in the last four years, early booking is strongly recommended.

- › Book online: [www.imeche.org/learntowin](http://www.imeche.org/learntowin)
- › Book over email: [eventenquiries@imeche.org](mailto:eventenquiries@imeche.org)
- › Book over telephone: +44 (0)207 973 1251



## Obituary: Suzanne Royce, 1946 – 2022



It is with sadness that we relay the passing of Suzanne Royce, who passed away on 5 March 2022 due to post-surgery complications with COVID-19

Having been involved in motorsports since the 70s in the US, Suzanne had been the Chief Scrutineer at the Formula One US Grand Prix since 1985 and was the first woman to be given an FIA International Chief Scrutineer License. She served for decades as the Chief Scrutineer at Detroit, Phoenix, Indianapolis, Circuit of the Americas, Sebring and other US venues, and was recognised for her work by COTA and the FIA at the 2021 US Formula One Grand Prix, shortly before she retired.

Outside of professional motorsports, Suzanne was an ardent supporter of the FSAE, Formula Student and Formula Hybrid competitions, having officiated at 80 competitions around the world.

Together with her husband Michael, Suzanne was a familiar face around the Silverstone paddock at the Formula Student UK competition, both as part of the scrutineering team and during the Dynamic events at Copse Corner.

She was always happy to help both student teams and the army of volunteers, including some who continue to work on the organising committee to this day.

Those who worked with her at Formula Student described her as a role model for the competition; knowledgeable, supportive, and keen to develop young engineering and motorsport talent, with several alumni going on to work with her in WEC and Formula 1 scrutineering crews after competing.

Suzanne was co-author of the book *Learn & Compete A Primer for Formula SAE, Formula Student and Formula Hybrid Teams*, in which she shared her experience and recommendations for student teams.

"It's no understatement to say that Formula Student couldn't have become what it is today without the invaluable contribution Suzanne made over her many years officiating at our competitions," said Dan Jones, Chief Judge for Formula Student in the UK. "She had a wonderful manner with the students and volunteers alike and truly was one of the FS family, she will be sorely missed both as a colleague and a friend."

On behalf of the Formula Student organising committee and the Institution of Mechanical Engineers, we thank Suzanne for her contributions to Formula Student and pass on our condolences to her family.







### TEAM SWAPNOJAN

Team Swapnojan is a Formula Student Team from Ahsanullah University of Science and Technology, Bangladesh, aiming for FSUK as their first on-site event. The team previously got 2 notable mentions in a Formula Student-style competition, FBV 2021, at their first attempt and now developing their car with the goal to participate in every dynamic event of FSUK 2022. Previously, the team lacked experience in optimizing with limited resource and data but this year they are following the 'KISS' method of Colin Chapman to wholeheartedly inhale the state-of-the-art applied engineering experiences from FSUK.

Students from variety of engineering discipline and years are emphasizing on setting a benchmark for our country towards a sustainable future in motorsports. Team Swapnojan's KTM 390 powered chariot weighing 225 kgs with spaceframe chassis wearing our very own local Jute-Glass fibre composite body is coming up in flesh and bones to tear up the tarmac through the heart of motorsports.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3538/1560/1185/1550

**Track** 1350/1320

**Car weight (approx.)**  
210.0 (kgs.)

**Weight distribution (approx.)**  
96.6/113.4

**Suspension** Double wishbone, Pushrod with adjustable ARB front/rear

**Tyres** 20.5x7.0-13 R20B Hoosier front/rear

**Wheels** 13"x6" Offset 38mm, PCD 100 front/rear

**Brakes** 5/8" piston front/rear

**Chassis** Mild steel space frame

**Engine** KTM390 RC

**Bore/stroke/cylinders/cc**  
89/60/1/385

**Fuel system** Electronic Injection

**Max power/max torque**  
32kW@9000rpm/36Nm@7000rpm

**Transmission** Chain driven, #520 type chain

**Differential** Open diff

**Final drive** 3.8



### ASTON RACING

Aston Racing is a small team made up of students from Mechanical, Biomedical and Electrical Engineering. This year while we are still going to have a combustion entry, we are starting to develop an electric car for next year, as this is the future of automotive technology and will therefore put our team in the best position when they leave university. Each year we aim to create a fast, reliable and cheap car under the guidance of faculty supervisors Mr. Reece Lille and Dr. Patrick Geoghegan. The aim is the same this year; to create a winning car that will complete all dynamic events and score highly at the competition. We are aiming to introduce a full aerodynamic package this year, and this,

alongside a reduction in the mass of the car, will lead to an improvement in our lap times. The team would like to thank the continued support of our sponsors ANSYS, John Ashely, Demon Tweaks and RS Components and the West Midlands Fire Service. Special thanks must be given to Amada UK for all their work in cutting and profiling all the beams used in the chassis and for cutting the rear bulkhead, as well as the industry visits and technical information they have provided the team this year. See you on track!



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2208/1608/1217/1594

**Track** 1360/1414

**Car weight (approx.)**  
243.7 (kgs.)

**Weight distribution (approx.)**  
92.6/151.1

**Suspension** Double wishbone pullrod front/pushrod rear

**Tyres** 7.0x16-10 A92 Avon front/rear

**Wheels** 7" front/rear

**Brakes** AP Racing CP7855 front/rear

**Chassis** Steel space frame

**Engine** Honda CBR600RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Stock Injectors

**Max power/max torque**  
87.24kW@13000rpm/64Nm @11000rpm

**Transmission** Chain driven, Witra 50-1 Simplex Roller Chain

**Differential** Drexler LSD

**Final drive** 3.75


**AIN SHAMS UNIVERSITY RACING TEAM**

Ain Shams University Racing Team was founded in 2010 with the aim of reviving the automotive industry in Egypt. The team consists of multidisciplinary students all aiming to design, build and test a formula student vehicle. The team is structured according to the design requirements and later restructured to accommodate the manufacturing of the vehicle and the competition events.

This year the team will be targeting a solid performance in both static and dynamic events as the vehicle is designed with a certain philosophy and reasonable targets focusing on durability and cost efficiency. The new 250 kg vehicle features a steel tube space frame with 10" R20 Hoosier tires and a 4-cylinder Honda CBR600 RR that outputs 79 hp and 49 Nm torque.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3025/1362/1245/1630

**Track** 1130/1100

**Car weight (approx.)**  
250.0 (kgs.)

**Weight distribution (approx.)**  
120/130

**Suspension** Double Wishbone equal arm length, pull rod front/push rod rear

**Tyres** 18x7.5-10 R20 Hoosier front/rear

**Wheels** Braid 10x7.5 ET33 aluminum front/rear

**Brakes** AP CP7855 0.55:0.45 front to rear front/rear

**Chassis** Steel tubes space frame

**Engine** Honda CBR600 RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Honda

**Max power/max torque**  
58kW@12000rpm/48.5Nm @9000rpm

**Transmission** Chain Drive

**Differential** 2010 FSAE Drexler LSD

**Final drive** 2.80


**CARDIFF RACING**

After competitive results at FSUK 2021, Cardiff Racing are back for their 19th year at Formula Student and bringing their strongest car yet. CR18 represents a blend of innovation and improvement over the team's past successes, building on areas of strength and ironing out weaknesses. The car retains the team's staple hybrid aluminium honeycomb

construction, playing to the properties of each material, but with greater emphasis in optimising serviceability and structural stiffness. The team again makes use of the powerful Triumph 675 Street Triple engine, this time packing a 102 BHP punch controlled via electronic throttle body, while CR18's aerodynamics package has been optimised for both durability and performance. Cardiff Racing are going into the competition with clear goals and the car to match them and are eager to get back on track. TEAM!


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2852.717/1487.08/1171.215/1540

**Track** 1190/1120

**Car weight (approx.)**  
203.0 (kgs.)

**Weight distribution (approx.)**  
92.1/110.9

**Suspension** Unequal Double Wishbone Pullrod front/Pushrod rear

**Tyres** 16x7.5-10 R25B Hoosier front/rear

**Wheels** OZ 10" OD, 7" width front/rear

**Brakes** AP CP7855 front/rear

**Chassis** Monocoque & steel space frame

**Engine** Triumph 675 Street Triple

**Bore/stroke/cylinders/cc**  
74/52.3/3/675

**Fuel system** Keihin KN-6 330cc

**Max power/max torque**  
76.2kW@11225rpm/69.55Nm @9757rpm

**Transmission** Chain drive, DID 520ZVM2 o-ring chain

**Differential** Drexler clutchpack LSD

**Final drive** 3.33



## CU PHOENIX RACING

Coventry University's Phoenix Racing first entered Formula Student in 2003 and has been present in the competition ever since. The team recently had a university record-breaking result in the competition, finishing in 11th place. This year the team is keen to push for a top ten finish and creating history for the university once again. The team has been pushing for a significant improvement in documentation as well as finding areas to improve and optimise the performance of PR87-22.

All of the members of Phoenix Racing would like to thank the faculty team and advisors for their support throughout the year. As well as a special thanks to our following sponsors including Coventry University: EvoScann, The Bugatti Trust, Hel Performance, Ogle, Siemans, Loctite, Norelem, Life Racing, Trelleborg, Easy Composites, ITG, Nuneaton Hoses & Fittings and E.Stokes Heat Treatment.



## TECHNICAL SPECIFICATION

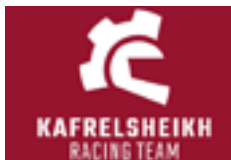
**Length/height/width/wheelbase**  
2950/1520/1100/1550  
**Track** 1240/1184  
**Car weight (approx.)**  
205.0 (kgs.)  
**Weight distribution (approx.)**  
82/123  
**Suspension** Double Wishbone  
pullrod front/Push-rod rear  
**Tyres** 18x6.0-10 LC0 Hoosier front/  
rear  
**Wheels** 10"x7" front/rear  
**Brakes** AP Racing CP2624-91 front/  
AP Racing CP2623-90 rear  
**Chassis** Steel space frame  
**Engine** Honda CBR 600 RR  
**Bore/stroke/cylinders/cc**  
67/42.5/4/599  
**Fuel system** 4xDenso 12 hole  
**Max power/max torque**  
63.5kW@9804rpm/65.4Nm  
@7940rpm  
**Transmission** Chain drive  
**Differential** Drexler LSD  
**Final drive** 3.231



## KAFRELSHEIKH RACING TEAM

Kafrelsheikh Racing team is an initiative held and operated from Kafrelsheikh University, and is dedicated to the development of race cars for national and international student competitions, such as EVER and Formula Student. Founded in December 2016, the team now consists of about 20 engineering students ranging from 1st - to 4th year exclusively from Kafrelsheikh University.

The team Consists of two arms, the technical arm that works on the car and the competition which breaks down to 6 teams, Chassis, Vehicle Dynamics, Engine, Power Transmission, Electronics and Business Team. the operations arm that works on the marketing, fundraising, and public relations.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3000/1556/1280/1630  
**Track** 1200/1170  
**Car weight (approx.)**  
300.0 (kgs.)  
**Weight distribution (approx.)**  
120/180  
**Suspension** Independent double  
wishbone, unequal A-Arms, Push  
rod front/rear  
**Tyres** 20x7.5-13 R250 Hoosier  
front/rear  
**Wheels** 7"x13" front/rear  
**Brakes** 5/8" bore front/7/8" bore  
rear  
**Chassis** Steel space frame  
**Engine** Yamaha YFM700RV  
**Bore/stroke/cylinders/cc**  
102/84/1/686  
**Fuel system** Low Pressure injection  
**Max power/max torque**  
47kW@11000rpm/40.8Nm  
@4856rpm  
**Transmission** Chain drive, 520  
**Differential** n/a  
**Final drive** 3.00



### DMU RACING

DMU Racing from De Montfort University Leicester will be aiming for a top 15 finish at this year's Formula Student competition, for their most successful campaign to date. Established in 2012, the team last enjoyed success in the 2021 competition with their highest placed finish of 17th overall and 5th best scoring IC team for fuel-efficiency. Since 2021, some design changes have included a shortened exhaust, updated drive train components,

our first-ever impact attenuator, and a 5% weight decrease. Team Leader Nuri Adam Uysal and the team would like to thank their sponsor's CAT, Northampton Motorsport, Siemens, Schroth Racing, Halfords and PTC as well as Faculty Advisor Yong Sun and the De Montfort University for their continued support of the Formula Student program.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2950/1360/1140/1550

**Track** 1360/1260

**Car weight (approx.)**  
215.0 (kgs.)

**Weight distribution (approx.)**  
95/120

**Suspension** Unequal, non-parallel, double wishbone suspension, Pushrods to coilover spring damper to bellcrank. front/Unequal, non-parallel, double-wishbone suspension. Pushrods to bellcrank to shock absorber to subframe. rear

**Tyres** 18x10x6" LC0 Hoosier front/rear

**Wheels** 10"x7" front/rear

**Brakes** AP Racing CP7854 17.8mm bore, Trunnion balance front/rear

**Chassis** Steel space frame

**Engine** Triumph

**Bore/stroke/cylinders/cc**  
74/52.3/3/674.8

**Fuel system** Denso 1060-72208

**Max power/max torque**  
62kW@10500rpm/54Nm@7500rpm

**Transmission** Chain drive

**Differential** Drexler v3

**Final drive** 3.43:1



### KILO FLIGHT

Team Kilo Flight are a Formula Student Racing team consisting of dedicated and hardworking young individuals. Our main commitment is to accomplish new milestones in the country's new emerging automobile industry. We are the first Formula Student team from our university and have already participated at Formula Student in 2021, securing a satisfactory position. The team is utterly promising to new challenges for shaping a vivid future. It's hard to assume what plans fate has for this team during the event but there is a saying "Fortune

favors the brave". If trying to achieve the almost apparently impossible is an act of bravery, fortune has to favor Kilo Flight. As the first team from their university, people have high hopes and expectations from the team. Thinking about all the hard work they had done, the expectations people have on them, all the little helps they got from unexpected places, failure might not be an option for them anymore. And hard work always pays.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2855/1415/1230/1580

**Track** 1240/1215

**Car weight (approx.)**  
280.0 (kgs.)

**Weight distribution (approx.)**  
128/192

**Suspension** Independent, double unequal wishbone, Unparallel, Push Rod, spring front/rear

**Tyres** 175 70R13 Dunlop front/rear

**Wheels** 6.88" wide, 1 pc front/rear

**Brakes** Single piston, balance bar proportioning front/rear

**Chassis** Steel space frame

**Engine** KTM Duke 390cc

**Bore/stroke/cylinders/cc**  
89/60/1/373

**Fuel system** Bosch, Port fuel Injection

**Max power/max torque**  
31.99kW@9000rpm/37Nm@7000rpm

**Transmission** Chain driven

**Differential** Open

**Final drive** 3.10





## KINGSTON RACING

Kingston Racing aims for a top 25 finish and completion of all dynamic events at this year's competition. This would be an amazing result in this year's packed competition will be made possible by all the hard work of every team member. The team was established in 2013 as KU E-Racing and finished 84th, 79th, 85th, and 84th from 2013 to 2016 respectively. The team's most recent result came in 2021 when it finished 7th overall and was one of few teams to finish the endurance finishing a strong 3rd which was their highest result and the first time the team completed all scrutineering stages and completed all the dynamic events.

After the 2021 results, the team is set out to build on the success and continue improving where they left off. With a newly reformed statics team headed by Dhruv Goenka the team is set to improve on the statics side compared to previous years. Team Leader Andres Bedoya and the team would like to thank their faculty advisor Patrick Sheen and the university technical staff who have worked hard to provide the aid that the team needs. They would also like to thank Kingston University for their support of the team's efforts in the Formula Student Competition.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2820/1300/1062/1530

**Track** 1300/1250

**Car weight (approx.)**  
220.0 (kgs.)

**Weight distribution (approx.)**  
101.25/118.83

**Suspension** Coilover w/ double wishbone (Converging Unequal Length) front/rear

**Tyres** 180 550R13 Avon Radial Slick front/rear

**Wheels** 7.5" front/rear

**Brakes** Hydraulic, OEM, 0.7" ID front/rear

**Chassis** Steel space frame

**Engine** Yamaha MT07

**Bore/stroke/cylinders/cc**  
80/68.6/2/689

**Fuel system** Bosch EV 14 CKxT Port Injector

**Max power/max torque**  
55kW@7000rpm/70Nm@5500rpm

**Transmission** Rear wheel drive

**Differential** LSD

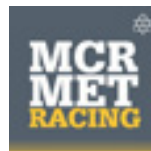
**Final drive** 2.688



## MCR MET RACING

Since their establishment in 2008, MCR MET Racing has taken strides in improving performance, most recently by developing and improving their brand-new full carbon fibre aerodynamics package, switching to a single-cylinder engine and converting to electric clutch and gear shifting. The aim of each year is to build a stronger foundation for the future generation team through training schemes to pair experienced engineers with new minds and fresh ideas. The team is composed of 35 engineering students of multiple disciplines, from

Foundation level to Masters, all fully dedicated to getting a racing car to the competition. Working with MMU's PrintCity allowed the team to apply rapid prototyping to their designs and gain an insight into sustainable and lightweight materials. With the help of our sponsors EASL and Schroth Racing, our new ideas and a larger yet more closely-knit team will improve their performance, helping them achieve the aim of a top 10 finish.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2955/1424/1180/1575

**Track** 1200/1175

**Car weight (approx.)**  
220.0 (kgs.)

**Weight distribution (approx.)**  
99/121

**Suspension** Double unequal length wishbones, push rod, anti roll bar front/rear

**Tyres** 205 470 R 13 FSAE C19 Continental front/rear

**Wheels** 2 piece split rims centerless front/rear

**Brakes** 14.0mm, 22cm3 Res Capacity front/rear

**Chassis** Tubular space frame

**Engine** Yamaha XJ6 2009

**Bore/stroke/cylinders/cc**  
65.5/44.5/4/599

**Fuel system** DTA batch

**Max power/max torque**  
50kW@11000rpm/  
62.6Nm@7500rpm

**Transmission** Chain Driven 520

**Differential** n/a

**Final drive** 4.00

**TEAM SOUTH BANK RACING**

Team South Bank Racing is the first ever London South Bank University team to make it all the way to the Silverstone competition. Given all the hard work and dedication put towards this project and the design and build of the vehicle, SBR will be aiming for a top 20 finish at this year's Formula Student competition along with the 2022 most competitive first-year team prize. Established in November 2019, the team was built during the COVID pandemic and as such its members had to rigorously work from home until the 2021 summer with no exception. Since then, focus has been set on the vehicle build and achieving a competitive Power Unit.

The team will focus on the completion of all events, both static and dynamic, at the best of their abilities with a main focus on all the static events and the Endurance dynamic event. Team Leader, Giovanni Cornaglia and the team would like to thank their sponsors DT Motorsport Engineering, SBD Motorsport Ltd., AVO UK, and The Digital Manufacturing Centre as well as Faculty Advisors Alessio Corso and Philip Howes and London South Bank University for their continued support of the launching of the Formula Student programme at LSBU.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2781/1470/1141/1153

**Track** 1240/1120

**Car weight (approx.)**  
230.0 (kgs.)

**Weight distribution (approx.)**  
103.5/126.5

**Suspension** Double unequal length A-Arm, Outboard Shock Absorber front/Trailing Arm, Outboard Shock Absorber rear

**Tyres** 20.5x7.0-13 R25B A2500 Hoosier front/rear

**Wheels** 225 front/rear

**Brakes** OBP, 0.625, bias bar adjustment front/OBP, 0.7, bias bar adjustment rear

**Chassis** Steel space frame

**Engine** Honda CBR600 F4 1999

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Custom fuel rail with 215cc Peco Injectors

**Max power/max torque**  
62kW@12500rpm/63Nm@9000rpm

**Transmission** Chain drive, 530Z1R

**Differential** Quaife LSD

**Final drive** 3.71:1

**TEAM AUJ**

Team Auj from the National University of Science and Technology will be aiming for a top 10 finish at this year's Formula Student competition for their most successful campaign to date. Established in 2018, the team last enjoyed success in the 2018 competition where they won the spirit of the formula Award. Since 2018, focus has been on improved structural strength, traction and control. Recognised for implementing engineering in its truest sense, the team will target reaching the Business Plan Presentation finals and finishing Endurance.

Team Leader Abdul Ahad Khan and the team would like to thank their sponsors SA Gardens, Mari Petroleum, RSS and Motor Maniacs as well as Faculty Advisor Col. Ikhlaq Khattak and NUST for their continued support of the Formula Student programme.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2600/1600/1200/1570

**Track** 1281/1292

**Car weight (approx.)**  
240.0 (kgs.)

**Weight distribution (approx.)**  
110/130

**Suspension** Dual wishbone, direct mount spring/dampers front/rear

**Tyres** 205/45R13 R25B Hoosier front/rear

**Wheels** 9.4(section width) front/rear

**Brakes** Dual Wilwood 17.5mm bore, Balance Bar for proportioning front/rear

**Chassis** Tubular space frame

**Engine** KTM DUKE

**Bore/stroke/cylinders/cc**  
105/0/1/690

**Fuel system** n/a

**Max power/max torque**  
56kW@8000rpm/74Nm@6700rpm

**Transmission** Chain driven

**Differential** LSD

**Final drive** 2.25:1



### NUST FORMULA STUDENT TEAM

NUST Formula Student Team (NFST) has been representing Pakistan in FS competitions since 2012 and has established itself as pioneer of FS culture in Pakistan. The team won 'Most Effective Communication Strategy' award in FSUK-14. In 2020, the team achieved an overall position of 7th in FSUK Virtual, ranking 3rd in the Design and Acceleration event, and 10th in the Cost and Skid Pad event. In 2021, the team was able to retain 3rd position in Design event and was able to achieve 8th position in Cost event in FSUK Concept Class. The team now aims for a top slot, focusing on a reliable car through improvement

in testing strategies. NFST recognizes the gap that currently exists between the educational and industrial sectors. To bridge this gap, the team has worked towards forming an industry-academia linkage, making institutions understand the demand of industry and vice versa. The team is also working to create a sustainable ecosystem for Pakistan's Formula Student teams. That is to gather Pakistan's existing FS teams on one forum and move forward as a FS community. All of these initiatives point towards team's ultimate aim: to build a better future for Pakistan.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2540/1476/1201/1580  
**Track** 1270/1270  
**Car weight (approx.)**  
225.0 (kgs.)  
**Weight distribution (approx.)**  
108/117  
**Suspension** SLA suspension, pushrod, inclined coil over dampers front/rear  
**Tyres** 20.5x7-13 R25B Hoosier front/rear  
**Wheels** 13"x7" 22mm offset front/rear  
**Brakes** Nearly vertically mounted, bore dia: 0.7", Stroke: 1.1" front/rear  
**Chassis** Mild steel tubular space frame  
**Engine** Honda CBR600F4i 2003  
**Bore/stroke/cylinders/cc**  
67/42.5/4/599  
**Fuel system** OEM Denso 12 hole  
**Max power/max torque**  
45kW@8000rpm/60Nm@6000rpm  
**Transmission** Chain drive with type 525  
**Differential** Drexler FSAE LSD  
**Final drive** 3.00



### EUFS

Founded in 2014, EUFS from the University of Edinburgh will be bringing its 7th car to FSUK, SISU 22C. As the Team has developed reliability in their designs over their history, for SISU 22C they plan to focus on investigating the aerodynamics of the car, and the development of aerodynamic devices and plan to be a competitive entry and score over 600 points at FSUK 2022. The team is also in the process of developing an EV powertrain for future years. The main improvement the team has made to their car are improved driver

ergonomics and increasing testing time for fine tuning of the vehicle dynamics, along with our first aerodynamic package, consisting of a front and rear wing. All of these improvements will lead to a predicted increase in points at the Dynamic Events. The team also plans to put more focus on the Static Events through better work documentation and a more in depth understanding of the car and the designs. The team is excited to take part in FSUK 2022 competition and hopes to secure their best finish to date.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2817/1510/1171/1530  
**Track** 1300/1300  
**Car weight (approx.)**  
216.4 (kgs.)  
**Weight distribution (approx.)**  
84.3/132.1  
**Suspension** Dual unequal length a-arms, pushrod front/rear  
**Tyres** 16"x10"x7" A92 Avon front/rear  
**Wheels** OZ 10"x7" front/rear  
**Brakes** AP Racing CP7855 inclined front/rear  
**Chassis** Space frame with an aluminium rear bulkhead  
**Engine** Kawasaki ZX-6R Ninja B1H  
**Bore/stroke/cylinders/cc**  
68/43.8/4/636  
**Fuel system** KEIHIN TTK-38x4  
**Max power/max torque**  
58kW@10400rpm/41Nm@9800rpm  
**Transmission** Chain, 792mm x 20mm  
**Differential** Drexler Adjustable V3 LSD  
**Final drive** 3.33



## SHU RACING

SHU Racing is a rapidly developing Formula Student team with their sights set on achieving another Hallam record-breaking result in the FSUK competition. After 12 years of competing, the team is now challenging for the top spots in dynamic events with aims of climbing the static event ladder, embodying sustainability within their Business, Manufacturing, and Cost proposals. As a diverse team ranging from L4 to L7 students from a wide array of courses, SHU Racing takes pride in the social value which Formula Student can bring to aspiring students. Opportunities from design to manufacturing, business and costing enables the team's

members to share knowledge from their respective courses to enhance the expertise of all involved – all whilst giving them hands-on experience in a motorsport setting. Though great strides have been made in recent years, SHU Racing will again bring a competitive package which minimises cost whilst optimising performance in every aspect of the car. The team's technical partnerships with industry also elevates the twoway knowledge share, developing the expertise of both the students and technical specialists.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2958/42/1473/69/1215.38/1570

**Track** 1206/1257

**Car weight (approx.)**  
195.0 (kgs.)

**Weight distribution (approx.)**  
87.6/107.4

**Suspension** Double wishbone, direct acting air-sprung shock front/bell crank linked push rod, air sprung shock rear

**Tyres** 16x6-10 R25B Hoosier front/rear

**Wheels** BRAID STURACE 10"x6" 10mm offset front/rear

**Brakes** 15mm push, balance bar front/20.6mm push, balance bar rear

**Chassis** Composite monocoque with steel roll structure

**Engine** KTM 500 EXC 2013

**Bore/stroke/cylinders/cc**  
95/72/1/510.4

**Fuel system** OEM KTM

**Max power/max torque**  
34.19kW@8000rpm/  
47.96Nm@3500rpm

**Transmission** Chain 428

**Differential** Drexler FSAE

**Final drive** 2.571:1



## FORMULA TRINITY

2022 will be the first time that Formula Trinity will compete in the Formula Student Class. The team was established in 2017 at Trinity College Dublin and has since grown to over 107 members across various disciplines in engineering, business, and AI. Having had major success in the past, coming in 2nd place in the 2019 FSUK Concept Class, Formula Trinity is determined to put the knowledge it has gained

over the past five years into practice by developing a high-quality vehicle. The team is determined and hard-working, and despite the effects of the Covid-19 pandemic, the team is on track to compete in 2022. The team would like to thank its faculty advisor Mr. Gerry Byrne for his continued support for the team and the Formula Trinity project as a whole over the last five years.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2200/1180/1280/1800

**Track** 1200/1168

**Car weight (approx.)**  
230.0 (kgs.)

**Weight distribution (approx.)**  
111/117

**Suspension** Double wishbone, Push rod with full ARB system front/rear

**Tyres** 13" R25B Hoosier front/rear

**Wheels** 7" front/rear

**Brakes** OBP Integral Master Cylinder, 0.625", Bias Bar front/rear

**Chassis** Space frame

**Engine** Honda CBF600 2009

**Bore/stroke/cylinders/cc**  
65/45.2/4/599

**Fuel system** Port fuel injection

**Max power/max torque**  
83kW@14000rpm/65Nm@8000rpm

**Transmission** Chain Drive 525

**Differential** Spool

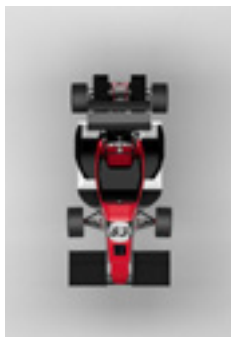
**Final drive** 2.75



### FORMULA UEM

The Formula UEM team from the Universidad Europea was established 14 years ago by 20 engine students who wanted to enter the automotive world. In 2021, the number of people who belong to the team increased, being one of the years with the highest influx of people in Formula UEM history. This year the car will have a complete aerodynamic package. The team has two

objectives for this year, the first is to train the team with experience in competitions because most of the guys are new, and the second one is to finish the Endurance. The team and the TeamLeader, Rodrigo Cabana, would like to thank Vicente Padilla for his support and for teachings transmitted to the team, well as the University for supporting the Formula Student program.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2910/1410/1444/1680

**Track** 1225/1100

**Car weight (approx.)**  
196.0 (kgs.)

**Weight distribution (approx.)**  
94.08/101.92

**Suspension** Asymmetric double wishbones, vertical dampers and springs, Pull rod front/Push rod Rear

**Tyres** 16X7.5-10 LOC Hoosier front/ rear

**Wheels** 10x7.5 front/rear

**Brakes** Tilton 78-750 front/rear

**Chassis** Tubular steel space frame and carbon fibre monocoque

**Engine** Honda CBR 600 RR (Moto 2)

**Bore/stroke/cylinders/cc**  
67/42.2/4/599

**Fuel system** Sequential

**Max power/max torque**  
72kW@13000rpm/76Nm@7700rpm

**Transmission** Chain 428

**Differential** Self-Locking Drexler

**Final drive** 4.00



### UCL FORMULA STUDENT

UCL Formula Student is making its return to FSUK after three years with a team which has been built from the ground up, having never attended a competition before. The team is small but tight-knit, having used the fresh start to restructure and implement best working practices. Their primary aim is to complete all dynamic events at the competition so as to hit the ground running for 2023 with the knowledge and experience required to produce a competitive car.

To achieve this, they prioritised testing over design complexity, allowing them to identify issues and develop running procedures as they strive to achieve high reliability and operational excellence. UCL Formula Student would like to thank all UCL staff, team and event partners, and friends and family for their support and making the team's entry possible.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2687/1300/1150/1550

**Track** 1118/1118

**Car weight (approx.)**  
240.0 (kgs.)

**Weight distribution (approx.)**  
120/120

**Suspension** Double wishbone, pushrod, adjustable dampers front/ rear

**Tyres** 18x6-10 R20 Hoosier front/rear

**Wheels** 7"x10" front/rear

**Brakes** AP Racing CP2623-260f front/rear

**Chassis** Tubular space frame

**Engine** Honda CBR600RR 2007

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Aerotech Labs bladder

**Max power/max torque**  
56.2kW@12500rpm/  
48.2Nm@10500rpm

**Transmission** Chain driven

**Differential** Drexler LSD

**Final drive** 4.667





## UNIVERSIDAD FRANCISCO DE VITORIA SPAIN

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### UPV RACING TEAM

UFV Racing Team is a Formula Student competition team, which aims to design, simulate, prototype, test and compete with a single-seater racing car. We are, a dynamic and proactive team, with the ambition of becoming a reference and competitive team in the industry. This season presents itself a great variety of new goals and challenges.

Being part of our team means being competitive, compromised and utterly passionate about motorsport. We know that experience and dedication are some of the key factors for success, and that is why we work daily to improve the team we are today.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2997/1435/1050/1585,6

**Track** 1116/1113

**Car weight (approx.)**  
240.0 (kgs.)

**Weight distribution (approx.)**  
96/144

**Suspension** Double wishbone independent suspension, pushrod front/rear

**Tyres** 18x6.5-10 R25B Hoosier front/18x7.5-10 R25B Hoosier rear

**Wheels** 10x7 front/rear

**Brakes** CP7855-89 front/rear

**Chassis** Tubular frame AISI 4130

**Engine** KTM 690 Duke 2009 single spark plug

**Bore/stroke/cylinders/cc**  
102/80/1/654

**Fuel system** Inline fuel pump, single injector

**Max power/max torque**  
47kW@7500rpm/67Nm@5500rpm

**Transmission** Chain 520 without o-rings

**Differential** LSD Drexler

**Final drive**



## UNIVERSITY OF ABERDEEN UK

66



### TAU RACING

TAU Racing from the University of Aberdeen are aiming to finish within the top 10 at the Formula Student UK competition for another year. After forming back in 2007, the team are well developed and have excelled at the competition, with their most notable achievements having placed 4th overall in 2017 and 6th overall in 2019. This year the team are running an undertray-diffuser aerodynamic package, alongside the

implementation of 10" wheels and the conversion to a more sustainable E85 fuel source, which were all developed through extensive research over the last 2 years. The team would like to thank their sponsors for their generosity, Prof. Richard Neilson for his continued assistance as TAU Racing's Faculty Advisor and the University of Aberdeen for the continued support and facilities that make this project a success.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2693.87/1387.8/1036.4/1541

**Track** 1210/1190

**Car weight (approx.)**  
214.0 (kgs.)

**Weight distribution (approx.)**  
96/117

**Suspension** Pushrod and rocker front/ Pushrod direct actuation rear

**Tyres** 16x7.5-10" R25B Hoozier front/rear

**Wheels** 10x5" Inner, 10x2" Outer Shell Component, ordered, centered, machined front/rear

**Brakes** CP7855-88PRTE Bias bar front/rear

**Chassis** Steel space frame

**Engine** Daytona 675R

**Bore/stroke/cylinders/cc**  
76/49.6/3/675

**Fuel system** Bosch Fuel Injector

**Max power/max torque**  
61.3kW@11845rpm/64.75Nm @7275rpm

**Transmission** Chain driven 520

**Differential** Drexler FS LSD

**Final drive** 4.00





## TEAM BATH RACING

2022 marks the 22nd and final combustion team from Bath, and TBR22 is determined to close this chapter on a high. Following a 2nd place in Concept Class, the team has worked relentlessly to develop more performance and reduce mass; all the while maintaining a reliability ethos. This season's competitor has been redesigned from the ground up, building upon two decades of experience to produce what is hoped to be one of the team's best performing cars. The lightest monocoque chassis ever produced by Bath has been developed with an entirely new laminate structure, paired with suspension supplier changes and a highly anticipated return to carbon fibre wheels to produce an aggressively light platform.

The powertrain has gone back to basics, stripping out mass and hunting reliability while continuing to develop more power than previous years. Finally, returning venturi cooling tunnels have been paired with swept mainplanes and vortex managing footplates to create one of Bath's most advanced and complex aerodynamics packages to date. The team is proud of the heritage of those who have come before, and are more driven than ever to ensure that TBR gives its absolute best to the end.

TEAMBATH  
Racing

## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2895/1415/1200/1535

**Track** 1200/1200

**Car weight (approx.)**  
144.0 (kgs.)

**Weight distribution (approx.)**  
71.18/73.02

**Suspension** Short-Long Arm  
Double Wishbones: Pushrod, Coil Springs front/Rocker-Conversion, Coil Springs rear

**Tyres** 16x7.5-10 R20 Hoosier front/rear

**Wheels** 7"x10", Centre-Lock Nut front/rear

**Brakes** AP Racing CP7855 front/rear

**Chassis** Composite monocoque  
**Engine** KTM 500 EXC

**Bore/stroke/cylinders/cc**  
95/72/1/510

**Fuel system** Bosch EV14 port injector

**Max power/max torque**  
47.9kW@9000rpm/36.9Nm  
@7000rpm

**Transmission** Chain Drive

**Differential** Custom Solid Spool  
**Final drive** 2



## TTP FULL BLUE RACING

TTP Full Blue Racing from the University of Cambridge presents the latest iteration of its innovative Formula Student vehicle. The 2022 design integrates a new chassis, centred on lowering the car's mass to aid handling and performance. The chassis layout gives an enlarged cockpit, allowing a greater range of drivers for vehicle testing, and a new cockpit display and data management system gives improved driver feedback with scope for future integration of design validation tools. CAD updates

are focussing on integrating many pre-existing elements of the vehicle into the new chassis, and CFD tools have been used to optimise the aerodynamic efficiency of several key areas. The move to a pneumatic gear shift system is a noteworthy improvement, allowing better drivability and a significant decrease in shift times. The team has adopted new modelling techniques this year to optimize the exhaust and air intake system, which will be complemented by the new lighter, more customizable limited slip differential.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2837/1382/1015/1550

**Track** 1200/1200

**Car weight (approx.)**  
235.0 (kgs.)

**Weight distribution (approx.)**  
105/130

**Suspension** Double unequal A-Arm,  
Coil-over strut suspension front/rear

**Tyres** 7.2x20.0-13 A92 Avon front/rear

**Wheels** Braid Sturace Monoblock 6" x 13" ET+18 front/rear

**Brakes** AP Racing CP2623 17.8mm bore front/rear

**Chassis** Steel space frame  
**Engine** Yamaha R6 5SL

**Bore/stroke/cylinders/cc**  
65.5/44.5/4/600

**Fuel system** Yamaha R6 stock

**Max power/max torque**  
60kW@12000rpm/58Nm@8200rpm

**Transmission** Chain driven

**Differential** Drexler LSD

**Final drive** 3.00



**TEAM BRADFORD RACING**

Team Bradford Racing (TBR) is in its 5th year and will be competing in Formula Student Class. Comprising a mixture of 1st, 2nd, 3rd year and postgraduate students, the team aims to build on the progress made in the first 4 years and will now produce their first race car for the 2022 event. In its first year in Formula Student Class, the team aims to produce a reliable vehicle which will complete all static and dynamic events. TBR is focusing on a modular design philosophy utilising readily available components, in order to reduce costs to the novice racer; both in initial purchase and maintenance. This design philosophy is focused on producing a simple, reliable vehicle, with design evolution in mind.

This will ensure it can be manufactured on time and allow future generations of the team to determine which sub-systems can be developed further. The 2022 car will also include a telemetry system to assist in defining vehicle behaviour characteristics, develop vehicle set-ups and to assist in driver training.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2800/1450/1200/1600

**Track** 1352/1302

**Car weight (approx.)**  
320.0 (kgs.)

**Weight distribution (approx.)**  
112/208

**Suspension** Double wishbone suspension, pushrod spring and damper front/rear

**Tyres** 16x7.5-10 Hoosier front/rear

**Wheels** 7.2" front/rear

**Brakes** Tilton 75 0.7" bore front/1.0" bore rear

**Chassis** Steel space frame

**Engine** Honda CBR600 RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** OMEC 600 Series

**Max power/max torque**  
79.9kW@13500rpm/61.5Nm @11250rpm

**Transmission** Chain driven

**Differential** QDF7Z LSD

**Final drive** n/a

**UCLAN MOTORSPORT**

UCLan Motorsport (UM) have conceived a one manufacturer single seater junior series. The target of this series is to bridge the current gap between go-karts and Formula 4 with a single seat 'Formula' style car as an alternative to 'Tin top' style junior/feeder series. To do this UM will develop a cost-effective, simple to drive single seat race-car, with the purpose of providing young racing drivers (14-17 years old) coming from go-karts a platform to learn and adapt to racing in 'open wheel formula' before making the progression to Formula 4.

To maximise profits UM will supply spares and upgrade packages to existing customers as well as first time buyers. The car will be designed with ease and cost of repairs in mind to better cater for less experienced junior drivers and to keep the series accessible and relatively inexpensive. As an additional benefit of the car being simple to work on, it will provide young engineers a good platform to learn, and to gain experience and confidence in the world of motorsport.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2100/1240/1225/1520

**Track** 1240/0

**Car weight (approx.)**  
240.0 (kgs.)

**Weight distribution (approx.)**  
96/144

**Suspension** Outboard dampers, double wishbones front/rear

**Tyres** 7x16" Avon A92 front/rear

**Wheels** 7" 3-piece aluminium alloy front/rear

**Brakes** AP CP7855-90P RTE front/rear

**Chassis** Steel space frame

**Engine** Yamaha YZF R6 2014

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Yamaha R6 Standard

**Max power/max torque**  
56kW@13000rpm/53Nm@9500rpm

**Transmission** Chain driven 520

**Differential** Drexler V3

**Final drive** 3.00



## UNIVERSITY OF LEICESTER RACING

Established in 2013, University of Leicester Racing has grown to consist of 48 members, from the School of Engineering and School of Informatics, from all years of study and backgrounds. Since 2019 the team's focus has been on developing its structure and the skills of its members to form a strong foundation going forward. FSUK 2021 saw the team have a strong concept class entry, scoring 5 times as many points as the team had historically scored with any of their previous entries. The team is looking to capitalise on the feedback received and

translate it into a solid Formula Student class entry. University of Leicester Racing will be aiming for a top 20 finish in this year's Formula Student Class competition, for their most successful campaign to date. Team Principal Arturs Mikals, and Chief Engineer, Matthew Jeffries, and the team would like to thank its sponsors as well as the University of Leicester for their continued support of the Formula Student programme.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2861.49/1564/1245.45/1545

**Track** 1551.38/1564.32

**Car weight (approx.)**  
247.0 (kgs.)

**Weight distribution (approx.)**  
117/130

**Suspension** Double Wishbones, Pushrod front/Direct Acting rear

**Tyres** 19.5x6.5-10 R25B Hoosier front/rear

**Wheels** 7" front/rear

**Brakes** 17.78mm dim, OBP Motorsport Master Cylinders, bias bar front/15.88 dim, OBP Motorsport Master Cylinders, bias bar rear

**Chassis** Steel tubular space frame

**Engine** Honda CBR600RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Honda CBR600RR

**Max power/max torque**  
45-55kW@10,000-11,000rpm/40-50Nm@8,000-11,000rpm

**Transmission** 520 Chain driven

**Differential** Quaife LSD

**Final drive** 3.20



## SALFORD RACING

We are Salford Racing, the University of Salford's Formula Student Team. Comprised of students from a variety of disciplines we focus our efforts to plan, design and build a race car to compete in the IMechE Formula Student competition. Salford Racing's team is comprised of engineering, business, and media roles whom all closely work together to achieve the most from the great opportunity Formula Student provides. The passion of the team was felt during the recent Formula Student 2021 event. Despite the challenges we faced, we arrived at the

live event in Silverstone, to gain valuable feedback from the judges. The team had an amazing experience, being able to network with other like-minded individuals at an energetic and exciting event. The car is developed and manufactured in-house using the skillset of our team, parts that cannot be created using our facilities are sourced from local manufacturers with whom we have strong ties.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2400/800/1200/1533

**Track** 1429/1484

**Car weight (approx.)**  
204.0 (kgs.)

**Weight distribution (approx.)**  
98.8/105.3

**Suspension** Double Unequal length Wishbone front/rear

**Tyres** 170 515R13 C9 Hankook Ventus F200 Slick front/rear

**Wheels** 13"x7" width, 20 Offset front/15 rear

**Brakes** OBP .7" actuators, connected master cylinder, balance bar front/rear

**Chassis** Steel space frame

**Engine** ROTAX DS 450

**Bore/stroke/cylinders/cc**  
97/61.5/1/450

**Fuel system** Seamons Type 420874402

**Max power/max torque**  
47.8kW@7500rpm/52Nm @6000rpm

**Transmission** Chain driven 550

**Differential** Quaife QDF7ZR LSD

**Final drive** 3.29


**UNIVERSITY OF MALTA RACING**

University of Malta Racing has just celebrated its 10 year anniversary and will be competing for the seventh time in its history. The team has made major strides forwards throughout the years, with the FC-20 being the team's lightest, most reliable and most competitive package to date.

The team aims to finish all of the dynamic events, including the endurance, and achieve a top 25 overall position.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2772/1490/1147/1537.59

**Track** 1275.3/1263

**Car weight (approx.)**  
211.0 (kgs.)

**Weight distribution (approx.)**  
100.13/110.7

**Suspension** Double unequal A-arms, direct actuation front/Pull-rod bell crank rear

**Tyres** 18x6-10 R25B Hoosier front/rear

**Wheels** 7" front/rear

**Brakes** Tilton 78 5/8" bore front/Tilton 78 1" bore rear

**Chassis** Tubular space frame

**Engine** Yamaha MT-07

**Bore/stroke/cylinders/cc**  
80/68.6/2/689

**Fuel system** RON98 common fuel rail

**Max power/max torque**  
47.8kW@9000rpm/62Nm @6300rpm

**Transmission** Single Drive Chain

**Differential** Drexler ANSICHT V2 LSD

**Final drive** 3.23:1


**SHEFFIELD FORMULA RACING**

Sheffield Formula Racing from the University of Sheffield will be entering their 12th car, SFR12, into the 2022 Formula Student UK event at Silverstone. After their win of the FSUK competition in 2021, Sheffield Formula Racing made major changes to the design, building on the success and aiming for the best car on track. Using this momentum and excitement, the team has developed, their first carbon fibre monocoque chassis, among other elements, and the team is prepared to fight to retain their title. As well as performing on track, Sheffield

Formula Racing aims to keep up a consistent run of good finishes in the static events. Sheffield Formula Racing would like to thank all their sponsors for their consistent contribution to the team. Every sponsor has helped in making a better car each year. Particularly, the team would like to acknowledge the massive support from the Advanced Manufacturing Research Centre at the University of Sheffield and Agemaspark who have both helped this year in making the design a reality.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2868/1347/1178/1535

**Track** 1150/1100

**Car weight (approx.)**  
162.0 (kgs.)

**Weight distribution (approx.)**  
71/91

**Suspension** Double Unequal A-Arm, Pull Rod Actuated, Split Heave/Roll Dampers front/rear

**Tyres** 16x6.0-10 R25B Hoosier front/rear

**Wheels** 7" forged front/rear

**Brakes** APRacing CP7855-92PRTE, balancing bar front/rear

**Chassis** Monocoque and steel space frame

**Engine** KTM 500 EXC

**Bore/stroke/cylinders/cc**  
95/72/1/510.4

**Fuel system** Keihin electronic

**Max power/max torque**  
38.2kW@8800rpm/47.3Nm @7100rpm

**Transmission** Single 428 Chain

**Differential** Drexler Clutch Type LSD

**Final drive** 3-4







## STAFFORDSHIRE UNI RACING

Staffordshire Uni Racing are still a fairly new team with our achievements unbeknownst to most smaller teams like our own. We placed 1st in First Year Vehicle class and 2nd Overall at the competition in 2021. This year, due to the different circumstances of the team and the changing nature of the competition, the team aims to still contend with bigger universities and place in the top 45. In regards to the BPP, it is hoped to place top 10 to push ourselves from last year, where we ranked in the top 25 teams.

The team will be continuing to stand by the 2021 Ethos: 'To Finish First, First We Must Finish', and so the team hopes to complete every event at the competition. The Team Leaders would like to thank all of our sponsors for their support, as well as the University. Most of all, we would like to give the utmost gratitude to the Faculty Advisor, Martin Dunn, for his unwavering support throughout.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3037/1150/1080/1600

**Track** 1150/1150

**Car weight (approx.)**  
312.0 (kgs.)

**Weight distribution (approx.)**  
143.52/168.48

**Suspension** Double uneven length wishbones, dual shock, push rod/rocker front/rear

**Tyres** 7.2x20-13 Slick Avon front/rear

**Wheels** 13" Braid Alloy Wheels front/rear

**Brakes** Wilwood GS Compact Remote Reservoir 12.7mm front/rear

**Chassis** Space frame

**Engine** Triumph Daytona 675cc

**Bore/stroke/cylinders/cc**  
74/52.3/3/675

**Fuel system** Multi-point Keihin

**Max power/max torque**  
76kW@11000rpm/68Nm@9500rpm

**Transmission** Chain driven

**Differential** Quaife QDF7ZR

**Final drive** 3.75



## UWE FORMULA STUDENT

UWE Formula Student from the University of the West of England will be aiming to finish within the top 3 of UK teams at the Formula Student competition at Silverstone. The team was formed in 2012 as a class 2 team with the first class 1 entry coming in the 2014 competition. The highest place finish for the team is 6th in 2021, also winning the skid pad event. UWE Formula Student has focused on the development of an aero package, onboard telemetry system and driver training this year with extensive on track testing at Filton Runway. Team Principal, Rhys Gamlin and the team would like to wholeheartedly thank all of their sponsors and specifically, Tollgate Hire who have been long term sponsors continually supporting the team with transport, and YTL Developments who could not have been any more helpful with allowing us to test this year's car on Filton runway.

The team would also like to thank their Faculty Advisor Jason Matthews and The University of the West of England, who without their continued support the project wouldn't be able to run.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2900/1400/1103/1550

**Track** 1200/1100

**Car weight (approx.)**  
210.0 (kgs.)

**Weight distribution (approx.)**  
100.8/109.2

**Suspension** Double converging unequal wishbones, blade style anti-roll, pullrod front/ pushrod rear

**Tyres** 16x7-10 A92 Avon front/rear

**Wheels** 7" front/rear

**Brakes** AP Racing CP6465-202PRME front/rear

**Chassis** Steel space frame

**Engine** Triumph Street Triple

**Bore/stroke/cylinders/cc**  
74/0/3/675

**Fuel system** Stock

**Max power/max torque**  
63.4kW@11500rpm/  
65Nm@7000rpm

**Transmission** Chain Driven 520

**Differential** Drexler Slaisbury Clutch LSD

**Final drive** 2.857



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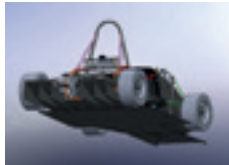
If you have any questions, please contact: [european\\_operations\\_recruiting@mckinsey.com](mailto:european_operations_recruiting@mckinsey.com)



**BRUNEL RACING**

This year marked the 4th year in which Brunel Racing designed an electric car for the FSUK competition, however it has been the first year that the team has been solely focused on building an electric car from scratch in one year. The design for this year's car was based on the research that was done last year for the Bre-3 concept electric car. This year focus was on the electric powertrain, drivetrain and the aerodynamic package. It is predicated that these improvements will be able to help contribute towards the project aim which is to produce and design which is capable of finishing the endurance event at the competition in Silverstone this July. This year the team had engineering students from all disciplines and levels involved in the project. A dedicated business was founded this year to help secure new sponsorship for the now all electric Brunel racing team.

The team would like to thank their sponsors both long term and new to the car for this year Brunel commercial, Custom Waterjet Cutting, Demon Tweeks, Easy Composites, Magellan World, Plyable, Renishaw, VR3 and west mountain radio as well as Brunel University for their support of this year's Formula Student programme.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2874/1390/1072/1600

**Track** 1250/1175

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
138/92

**Suspension** Double unequal length wishbone A-arm with push rod actuation and ARB front/rear

**Tyres** 16x6-10 R25B Hoosier Slick front/rear

**Wheels** Width:6.9 OZ FS 10" Magnesium Wheel front/Width:8.4 OZ FS 10" Magnesium Wheel rear

**Brakes** Tilton 77, 3/4inch bore push-type, trunnion bias-bar front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 228 HV Combined Cooled

**Accumulator Spec** Samsung 30Q 18650 Lithium Ion

**Max power/max torque**

109kW@6500rpm/230Nm for a few secs

**Transmission** 520 chain and sprocket

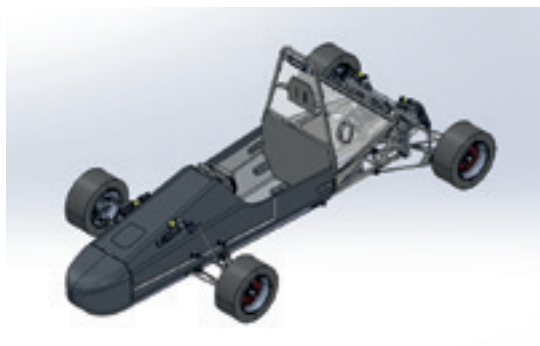
**Differential** Drexler Salisbury plate type

**Final drive** 3

**CITY RACING**

Team CR22 from City, University of London will be aiming to do as well as possible as their first foray into Electric Vehicle design. The Formula Student competition is something that the City Racing team is familiar with, with this being their 7th entry into the series, however the change from internal combustion engine to electrical motor present a whole new host of challenges that need to be overcome.

his is something that the CR22 look forward to overcoming and proving that a first time entry into the EV class can also be an entry that makes it onto the track. Team Leader, Tayyeb Uddin, and the team would like to give a big thank you to Faculty advisor Earl Peters and the university for their support and commitment to both CR22 and the Formula Student Project as a whole.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3167.3/1557.4/1145.5/2048.2

**Track** 1373.2/1240.27

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
97.8/132.2

**Suspension** Converging unequal length double wishbone pushrod front/rear

**Tyres** Avon 7.0/16.0-10 A92 racing slicks front/rear

**Wheels** Force Racing V5 10-inch, milled Al alloy wheels front/rear

**Brakes** AP Racing CP7855 14mm front/AP Racing CP7855 16.8mm rear

**Chassis** Monocoque front and tubular space frame rear

**Electric Motor** ME1114 PMAC Motor

**Accumulator Spec** Thundersky

**Max power/max torque**

24kW@xrpm/50.4Nm for xsec

**Transmission** 520 Pitch chain-drive

**Differential** Drexler Formula Student 2010 V3

**Final drive** 4.1



## CAIRO UNIVERSITY EGYPT

### CAIRO UNIVERSITY RACING TEAM

Cairo University Racing Team (CURT) aims to bring the pharaonic legacy back to life. Ancient Egyptians excelled in the field of engineering 7000 years ago, and CURT is determined to do the same today. CURT's vision is to have a huge impact on formula student competitions worldwide, and most specifically FSUK. The team aspires to make it to the Top 10 in the overall ranking this year, with high hopes of a Top 5 in the Business, 3 Cost event and top 10 in Design events. The team's first participation was FSUK12 to be a pioneer in the MENA region participate in this competition. CURT then won "The most challenging team award" in FSG 15.

The team was also the first in the MENA region to pass all technical inspections in both FSUK16 & FSG16. CURT then achieved 3rd rank in Cost event FATA17. In FSUK19 they turned to EV for the first time and they achieved the rank of 20th in the design events. Finally, and due to COVID-19 circumstances, for the last 2 years they participated in 2020 and Concept Class 2021 at FSUK and they achieved 12th rank in design events and 4th rank in cost and manufacturing events. The team is proud to be backed up by its own faculty, workshops, and several other sponsors that provide the necessary support.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2715.81/1429.85/1270/1580

**Track** 1200/1140

**Car weight (approx.)** 270 (kgs.)

**Weight distribution (approx.)**  
124/146

**Suspension** Double unequal length wishbones, Push rod spring-damper acuation front/ front

**Tyres** Hoosier 18x6-10, R25B front/rear

**Wheels** Keizer 7" Aluminium 10" Forged Billet front/rear

**Brakes** 14 bore diameter, push type front/rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228 MV

**Accumulator Spec** A123 lithium ion prismatic pouch

**Max power/max torque**

100kW@6500rpm/240Nm for a few secs

**Transmission** RWD

**Differential** Drexler Limited Slip Differential

**Final drive** 3:1



## GHEENT UNIVERSITY BELGIUM

### UGENT RACING

UGent Racing is a new and upcoming Formula Student team founded in 2020 in the middle of the COVID-19 pandemic. After delivering their first prototype car in October 2021, they are participating in Formula Student competitions for the first time this summer with their second generation race car.

As a new team it's their goal to gain a lot of experience in scrutineering, static events and dynamic events and to get to know other teams.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3100/1522/1466/1585

**Track** 1290/1284

**Car weight (approx.)** 290 (kgs.)

**Weight distribution (approx.)**  
156/144

**Suspension** Double wishbone, pull rod, coil over springs front/double wishbone, pushrod, coil over springs rear

**Tyres** Hoosier 16.0 x 7.5-10 R20 front/rear

**Wheels** OZ racing cast Magnesium 7x10, ET: 22mm front/rear

**Brakes** CP7855, 15.8mm bore, 30mm stroke, bias bar front/CP7855, 23.8mm bore, 28mm stroke, bias bar rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 208 high voltage combined cooling

**Accumulator Spec** Molicel P28A

**Max power/max torque**

68kW@6000rpm/140Nm for xsecs

**Transmission** Chain size 420

**Differential** Electronic

**Final drive** 3.6



**HWRACING**

After two years of virtual events only, FS 2022 will be a very exciting year for HWRacing. HWR-11 will mark HWRacing's first EV entry to the competition and the first aerodynamic package manufactured for the vehicle, upgrades which have been in development for over 3 years and are finally ready to be implemented. This year the team has undertaken the challenge of increasing the simulation and analysis

work on the car to improve the performance and has implemented a new team dedicated to static events. Thanks to these developments HWRacing is aiming for a top 20 finish. Another notable improvement from the last entry is a highly customisable suspension setup thanks to adjustable anti-roll, ride height, dampers and motion ratio. The team is made of around 40 students from all years and degrees offering the chance for personal development and extensive knowledge transfer to lay the foundations for the team's future.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2979.48/1439.36/1190/1540

**Track** 1240/1170

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
123/127.17

**Suspension** Unequal Length, Non-Parallel double Wishbone, Pushrod Actuated front/rear

**Tyres** 16x7.5x10 front/rear

**Wheels** 7" Single Piece Cast Magnesium Alloy /w Post Machining front/rear

**Brakes** AP Racing CP7855 Master Cylinder - 14mm front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 228, Liquid Cooled

**Accumulator Spec** Samsung INR18650-25R

**Max power/max torque**

100kW@5000rpm/240Nm for 5 secs

**Transmission** Electric motor, Chain Drive

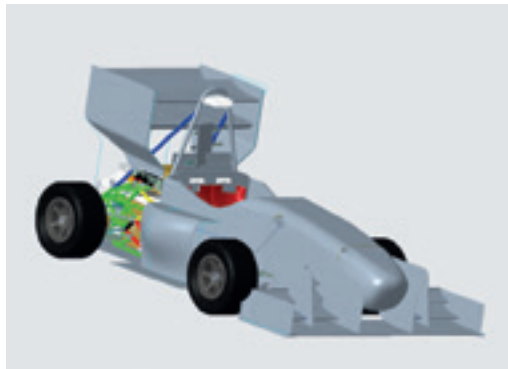
**Differential** Spool differential

**Final drive** 3.38

**CLEAR RIVER RACING**

In July 2007 Göran Karlsson (former faculty advisor at Karlstad University) brought a group of students to Silverstone Circuit to see what Formula Student was all about and to see how the competition worked. The idea with the trip was that it would result in the start of a Formula Student project at Karlstad University – which happened in the fall of 2007. Clear River Racing is the name that the new team took when building the first car, CRR08, and it is still the name that is used for the FS project at Karlstad University. Clear River Racing has participated nine times in the competitions at Silverstone and finished 3rd in 2017. Besides participating at Silverstone, Clear River Racing has participated in the Baltic Open for four years and has also hosted the competition once. After Clear River Racing placed as number three in Baltic open in Tallin 2010 we got the chance to arrange the competition in Karlstad during 2011, even though we didn't win.

So, in August 2011 we arranged the competition in Karlstad and it was a very fun and successful event! Clear River Racing's team for 2021 was the first team to build an electric racing car, starting a new chapter for CRR, which will be followed by the 2022 team.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2992/1600/1192/1575

**Track** 1212/1178

**Car weight (approx.)** 238 (kgs.)

**Weight distribution (approx.)**  
89.5/148.5

**Suspension** Double wishbone push rod suspension front/rear

**Tyres** 10X19-10", LC10, Hoosier front/rear

**Wheels** 7.0, Magnesium front/rear

**Brakes** AP Racing, CP7855, 16.8 mm front/rear

**Chassis** Hybrid carbon fibre monocoque

**Electric Motor** Plettenberg 15-50-B4-S-P30

**Accumulator Spec** Panasonic SANYO NCR18650GA

**Max power/max torque**

15kW@11000rpm/40Nm for xsec

**Transmission** Hub mounted motors with planetary gearboxes

**Differential** n/a

**Final drive** 4




**IIT BOMBAY RACING TEAM**

With an aim to "Revolutionise Electric Mobility in India, focusing on Sustainable Technologies and Innovation", the IIT Bombay Racing team has left no stone unturned to achieve this over the past 12 years. Based in Mumbai, the team intends to inspire and prepare students to enter the EV field and believes in building engineers who are motivated about what they do and are practical about how they do it. The team has over 70 members from streams like engineering, design, management and pure science who continuously

learn from each other and grow through the year. With 7 electric cars, each one bettering the previous both in terms of performance and reliability, the team is determined to keep improving. This year they are using new motors that are lighter and have a higher power density. On the electrical side, the team is making a self developed AMS for more versatility. The team would like to thank their faculty advisor Prof Sandeep Anand and the college IIT Bombay for their continued support.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3026/1398/1314/1550

**Track** 1168/1143

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
71.7/158.3

**Suspension** Pull rod, double A-arm with unequal & unparallel links front/rear

**Tyres** 18x7.5-10 Hoosier R25B front/rear

**Wheels** 10x7 Forged Oz racing Mg alloys (+22 mm) front/rear

**Brakes** AP Racing, CP 7855-88PRTE; 14 mm bore dia, Proportioning using spherical bearing-based balance bar front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 188 HV

Liquid Cooled

**Accumulator Spec** E Propulsion systems Pouch cells

**Max power/max torque**

60.2@6500rpm/90Nm for 120sec

**Transmission** Single step reduction Planetary gearbox (with fixed ring gear configuration)

**Differential** Electronic

**Final drive** 4.55


**LANCASTER E-RACING**

Lancaster e-Racing is a highly motivated and ambitious team comprised of 18 Masters of Engineering students from Lancaster University. The team was initially founded in 1999 and, having previously built internal combustion cars for most of its existence, it is the team's 5th year entering with an electric vehicle. Lancaster e-Racing intends to utilise the electric power train and carbon-neutral materials to uphold the University's environmental policies and goals. This year's team is hoping to develop on the previous achievements made, with special attention towards our electrical

systems to ensure that the car works flawlessly and safely. Lancaster e-Racing wants to showcase its competitive nature at the 2022 event and cement itself as a solid rival for the other teams. They want future Lancaster students to fight to maintain their position within the EV sector as well as the overall competition and continue the development of innovations to propel future Lancaster teams forward.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2946/1463.2/1300/1600

**Track** 1260/1240

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
103.5/126.5

**Suspension** Lancaster links, pushrod to top a-arm, coilover shock front/Unequal length converging w/bones, pushrod top a-arm rear

**Tyres** Hoosier R25B C2000 18X6.0-10 front/rear

**Wheels** Force Racing CNC spun, billet aluminium center, 7" width, 10" diameter, 38.5mm offset (F & R same) front/rear

**Brakes** AP Racing CP7855-90PRTE, bias bar, 15.9mm bore front/rear

**Chassis** Steel tubular space frame

**Electric Motor** EMRAX 208 MV LC

**Accumulator Spec** Samsung/18650-25R

**Max power/max torque**

68kW@6500rpm/140Nm for xsec

**Transmission** DID 428VX chain, single stage gearing

**Differential** Clutch type drexler standard FS differential with 40/50 degree ramps. 10Nm preload

**Final drive** 4.5


**LIU FORMULA STUDENT**

LiU Formula Student is a Swedish Formula Student team from Linköping. Our goal is to for the first time compete with an electric vehicle, and we are aiming to make it through all events without any car failures. We are a team consisting of around 90 students from several educational programs at Linköping University, with different backgrounds and nationalities.

After a 2-year break from competitions due to the covid-19 pandemic, the team is incredibly excited to return to the track at Silverstone for FSUK 2022. The team would like to thank their sponsors and Linköping University for all of their support!


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3055/1380/1190/1585

**Track** 1200/1180

**Car weight (approx.)** 235 (kgs.)

**Weight distribution (approx.)**  
89.3/145.7

**Suspension** Double unequal length a-arms with pushrods front/rear

**Tyres** 20x0.7-13, Dry, Goodyear Eagle G-19 (D2704) front/rear

**Wheels** 7x13 forged magnesium rim from OZ Racing (offset: 30) front/rear

**Brakes** Single circuit, B=14mm, 30mm stroke front/Single circuit, B=15.8 mm, 30mm stroke rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228 HV LC

**Accumulator Spec** Murata 18650 VTC6

**Max power/max torque**

100kW@5000rpm/240Nm for a few secs

**Transmission** Chain, 520

**Differential** Drexler FS2016, limited slip

**Final drive** 4


**LUMOTORSPORT**

LUMotorsport from Loughborough University will be aiming for a top 10 finish at this year's competition with their first electric car. Established in 2002, they achieved their best performance yet with their last IC car in 2019, placing 4th overall out of 88 teams. Since the team's last competition, there has been a focus on developing its simulation capabilities such as a more

sophisticated tyre modelling tool to improve upon LFS19's single-lap performance and the team's performance in all 4 dynamic events.

Additionally, after placing 9th in last year's Concept Class virtual event, a emphasis has also been placed on taking a ground up approach to static events to maximising the points haul. As a team, LU Motorsport would like to thank all their sponsors, Faculty Advisor Scot Layton and ESAs, John Budworth, Iain Harber and Graham Smith for their continued support and dedication to the team.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2883/1420/1175/1535

**Track** 1222/1207

**Car weight (approx.)** 250 (kgs.)

**Weight distribution (approx.)**  
90/160

**Suspension** Double wishbone, Pull-rod with aluminium rocker front/Double wishbone, Push-rod with aluminium rocker rear

**Tyres** 16x6x10 Hoosier LC0 front/rear

**Wheels** Braid Sturace 10"x7", Aluminium (offset 23mm) front/Braid Sturace 10"x7", Aluminium (offset 10mm) rear

**Brakes** AP Racing Push Type, 17.8mm Bore front/AP Racing Push Type, 15.9mm Bore Rear rear

**Chassis** T45 steel space frame with rohacell composite sandwich panels

**Electric Motor** EMRAX 228HV LC

**Accumulator Spec** Sony/Murata VTC6 18650 Cylindrical cell

**Max power/max torque**

109kW@5500rpm/230Nm for a few secs

**Transmission** Single Renthal RR4 520 Road Race SRS chain

**Differential** Drexler FSAE LSD

**Final drive** 3.23

**LJMU E-RACING**

LJMU e-Racing Team will be competing with their first electric vehicle at Formula Student UK 2022. With success since 2010 with internal combustion vehicles and at the FS Sim Racing events, Liverpool John Moores University has been working hard over the last few years to adapt their FS entry to incorporate an electric powertrain. The design of LJMU 22e focusses around the YASA-750 electric powertrain, more specifically incorporation of robustness and dependability. Through use of various testbeds and dynamometer testing, the reliability of the control systems that characterise the powertrain have been rigorously analysed to ensure satisfactory operation.

The team will embrace the challenge of the FSUK 2022 competition as a great opportunity to improve and strengthen for future events. LJMU e-Racing Team would like to extend their gratitude to the Faculty of Engineering and Technology at LJMU, and the teaching staff for their endless support throughout the development process of the vehicle. LJMU e-Racing Team would also like to thank their sponsors, without whom the entirety of the project would not be possible.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3000/1450/1150/1620

**Track** 1180/1280

**Car weight (approx.)** 221 (kgs.)

**Weight distribution (approx.)**  
99.89/121.51

**Suspension** Double wishbone, pushrod front/rear

**Tyres** 6.2/20-13, Super Soft A92, Avon front/rear

**Wheels** 172mm, magnesium front/rear

**Brakes** CP7854 AP Racing, adjustable bias, 20.6mm bore front/rear

**Chassis** Steel space frame

**Electric Motor** Yasa 750

**Accumulator Spec** EP Battery

**Max power/max torque**  
100kW@1600rpm/709Nm for 30 seconds

**Transmission** Chain driven, 520 chain

**Differential** Drexler Limited Slip FSAE

**Final drive** 1.6:1

**NEWCASTLE RACING**

Newcastle Racing 14, (NR14) from Newcastle University is aiming to enter the FS class with an electric space frame vehicle design. NRX, Newcastle Racing's 10th car, was the last to be built and raced in the Formula Student competition all the way back in 2017. The primary goal of our team this year, is to completely manufacture and test NR14 with the aim of competing this year.

NR14 will incorporate some of the components that were planned for use in NR11, which was designed over the course of multiple years but never built.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2926/1508/1331/1820

**Track** 1307/1307

**Car weight (approx.)** 250 (kgs.)

**Weight distribution (approx.)**  
96/144

**Suspension** Pushrod double A-arm wishbone suspension front/rear

**Tyres** 15272, 7/16-10 Formula Student AVON front/rear

**Wheels** 10" V5 Force Racing Wheels front/rear

**Brakes** Tilton 78 series Master Cylinder with Tilton 900 series balance bar front/rear

**Chassis** Space frame

**Electric Motor** EMRAX 228

**Accumulator Spec** Samsung 18650-30Q

**Max power/max torque**  
110kW@5500rpm/240Nm for 1sec

**Transmission** Rear Wheel Belt drive

**Differential** Drexler Standar Formula Student Differential (120)

**Final drive** 3:1



### OXFORD BROOKES RACING

Oxford Brookes Racing (OBR) is the Formula Student team of Oxford Brookes University. In 2019 the team concluded their successful internal combustion program and began the evolution to a future-oriented electric team. Since then, the focus has been the development of OBR's all-electric four-wheel-drive race car. Blending over 20 years of experience with members from more than 25 countries, OBR is eager to complete this significant challenge and demonstrate their hard work to the world. OBR22 incorporates bespoke parts including a CFRP monocoque and an aerodynamic package, designed in-house and manufactured to the highest standards.

The combination of a self-developed accumulator and planetary gearbox with advanced control systems such as traction control and torque vectoring will make OBR22 the fastest car in the team's history. OBR would like to thank all their supporters in the university and industry as well as their alumni and fans for their fantastic support throughout the seasons. As OBR continues to build on its multi-year legacy as a competitive, high-quality team, the team would like to thank the IMechE for providing this platform to develop versatile graduates.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2854/1558/1200/1535

**Track** 1236/1236

**Car weight (approx.)** 240 (kgs.)

**Weight distribution (approx.)**  
115.2/124.5

**Suspension** Double unequal length wishbones with direct acting push rod front/Double unequal length rocker actuated wishbones with push rod and U-bar anti-roll bar rear

**Tyres** 16"x10"x6", Hoosier R25 B front/rear

**Wheels** 7" in-house carbon fibre 3 piece rim with Aluminium 7075-T6 wheel centre front/rear

**Brakes** AP Racing CP5855, 15.8mm diameter front/AP Racing CP5855, 15.0mm diameter rear

**Chassis** Carbon fibre composite ,onocoque

**Electric Motor** AMK DD5-14-10-POW front/rear

**Accumulator Spec** Melasta, Lithium-ion Pouch Cells

**Max power/max torque**

35kW@16,000rpm/21Nm for 1.24s

**Transmission** Single-stage planetary gearbox

**Differential** n/a

**Final drive** 15.55



### QUEEN'S FORMULA RACING

Queen's Formula Racing are competing with their first EV at this year's competition. Having competed with an IC car up to 2019 and spending the last few years developing the new electric car, the team is eager to put their new design and knowledge to the test. This aim this year is to pass scrutineering and complete all the dynamic events. First formed in 1999, the team brought their first car to FSUK in 2001 and have had 6 top 10 finishes, winning the acceleration and efficiency events in 2017. In 2019, the team reached the Design Presentation finals and they will be eager for continued success in this new vehicle format. As well as aspiring to repeat past successes, the team will target reaching the Business Plan Presentation finals. In previous years, the team consisted of only mechanical engineering students but with the added complexity of the switch to EV, the team has now welcomed electrical engineering students. The team would



like to thank their sponsors, McCloskey International, Vickerstock, Hutchinson Engineering and Nutts Corner as well as Faculty Advisor Dr Geoff Cunningham and Queen's University Belfast for their continued support of the Formula Student Programme.

### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2667/1389/1072/1530

**Track** 1200/1200

**Car weight (approx.)** 227 (kgs.)

**Weight distribution (approx.)**  
102/125

**Suspension** Unequal length, converging double wishbone. Pull-rod actuated spring-dampers front/Unequal length, converging double wishbone. Pull-rod actuated springs-dampers. Adjustable U-lever anti-roll bar rear

**Tyres** 7.0/16.0-10, A92, Avon front/rear

**Wheels** 6.5x10 ET29, Aluminium Alloy front/rear

**Brakes** AP Racing CP7855 14mm bore front/rear

**Chassis**

**Electric Motor** EMRAX 228 MV

**Accumulator Spec** Sony

**Max power/max torque**

100kW@5500rpm/230Nm for a few secs

**Transmission** Chain drive 520

**Differential** Drexler LSD

**Final drive** 3.071





## PAKISTAN NAVY ENGINEERING COLLEGE PAKISTAN

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### TEAM FORMULA ELECTRIC RACING – NUST

Team Formula Electric Racing – NUST is Pakistan's first Formula Student electric team and has previously participated in FSAE Electric 2016, Formula Student UK 2018 & Formula Student Russia 21. Since its inception, the team has promoted shift from combustion to electric in the country. The team is divided into Electrical, Mechanical, Vehicle Integration, and Marketing and Communications departments. A Documentations wing is formed from the members within the main departments.

The team's approach for this year's vehicle was to improve the reliability of components. PCB manufacturing was outsourced, instead of in-house etching. The 2022 battery pack uses Li-ion cylindrical cells in modules of 8, compared to previous cells consisting of Li-Po pouch cells. The cells were purchased and the modules designed by the team itself.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2966/1490.6/1347.7/1700

**Track** 1200/1300

**Car weight (approx.)** 280 (kgs.)

**Weight distribution (approx.)**  
126/154

**Suspension** Double Wishbone with Direct Actuated Dampers front/rear

**Tyres** 20x7.5-13 R25A, Slicks Bias front/rear

**Wheels** Diameter 320mm, Width 190.5mm, Wheel Offset 35, front/rear

**Brakes** Tilton 78-625 Push type, fixed balance bar front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 208

**Accumulator Spec** Samsung INR 25R Lion 18650

**Max power/max torque**

75kW@xrpm/140Nm for x secs

**Transmission** Chain drive 530

**Differential** Open Differential directly coupled with motor sprocket.

**Final drive** 5.4



## TECHNICAL UNIVERSITY OF DENMARK DENMARK

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### VERMILLION RACING

Vermilion Racing is from the the Technical University of Denmark (DTU), and will this season compete at silverstone. This is the third time the team will participate, and after a standstill in 2020 - 2021 due to the Covid-19

The goal for this season is to compete in all of the dynamic events, and score well in all of the static events. The entire team would like to thank all of our sponsors, our team advisor Professor Nenad Mijatovic and DTU for their continued



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2900/1550/1200/1525

**Track** 0/0

**Car weight (approx.)** 260 (kgs.)

**Weight distribution (approx.)**  
109/163

**Suspension** Non-paral. double A-arm, direct acting from lower arm front/Non-paral. double A-arm, push-rod from lower arm rear

**Tyres** 7/20-13, 14254, Avon front/rear

**Wheels** 7" aluminum alloy front/rear

**Brakes** AP Racing CP7855 front/rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228HV

**Accumulator Spec** Turnigy

**Max power/max torque**

100kW@5000rpm/240Nm for a few seconds

**Transmission** Chain drive 428, Single speed

**Differential** Drexler LSD diff. 40/50 degree setup. 40 Nm preload

**Final drive** 3.5







## TEAM BATH RACING ELECTRIC

Team Bath Racing Electric 22 will be competing in the FS Class at the 2022 Formula Student UK competition. The primary aim of the team is to win the title of top UK electric Formula Student team. The team has focused on improving upon the best features of previous designs, by introducing an aerodynamics package to improve vehicle cornering speed, maximum rear wheel traction and improve stability. The team have also introduced a new Low Voltage system, with two separate CAN networks to ensure critical systems are unaffected by the introduction of a telemetry system. Adjustments to rear suspension and braking configurations will ensure higher reliability during the endurance event. TBR22 features a steel spaceframe chassis. A single permanent magnet axial flux EMRAX 228 motor will drive the two rear wheels via a chain transmission with spool axle.



The powertrain will be powered by brand new single accumulator located behind the driver consisting of 714 cells arranged in six subpacks with a combined capacity of 7.9 kWh.

## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3016/1500/1175/1525

**Track** 1200/1160

**Car weight (approx.)** 225 (kgs.)

**Weight distribution (approx.)**  
101.25/123.75

**Suspension** Double wishbone, pullrod, in-plane front/Double wishbone, pushrod, in-plane rear

**Tyres** Hoosier 16.0 x 6.0-10 LCO front/rear

**Wheels** OZ centre lock 10" spin cast magnesium, 22mm offset front/rear

**Brakes** Tilton 78-1000, 7/8" bore, balance bar front/Tilton 75-875, 1" bore, balance bar rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228 MV CC

**Accumulator Spec** Sony US18650VTC6

**Max power/max torque**  
109kW@6500rpm/240Nm for a few secs

**Transmission** Chain drive, simplex 520 chain

**Differential** Drexler limited slip

**Final drive** 3.3



## UH RACING

The 2022 season sees UH Racing celebrate their 25th year of competition. After the coronavirus pandemic curtailed efforts to produce a running car in 2021, the team are looking to build upon their history of strong results as they bring UH25, their first competing electric vehicle in 12 years, to the FSUK competition. A 576.4Vdc, 7.45kWh battery pack provides energy storage with power being transferred to all 4 wheels through a complex control system utilising a Cosworth PDU & two Bucher Drives Inverters. Custom Fischer motors provide up to 29.1Nm of torque to each self-designed 9:1 ratio epicyclic gearbox, in turn driving lightweight magnesium OZ rims mounting Pirelli FS slick tyres.

The chassis is a high strength laser cut tubular steel spaceframe fitted with Dacron, fibreglass and CFRP bodywork. This is accompanied by a refined aerodynamics package. The suspension system on UH25 has been upgraded to include a custom FS spring & damper setup developed with vehicle dynamics specialists Multimatic. UH25 will be UH Racing's most ambitious car to date as the team fully cements its move away from the combustion engine.

UH RACING



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2973/1397/1188/1580

**Track** 1200/1180

**Car weight (approx.)** 220 (kgs.)

**Weight distribution (approx.)**  
103.4/116.6

**Suspension** Unequal length double A-arms; direct dampers front/Unequal length double A-arms; push rod rear

**Tyres** 184/40R13, Slick, Pirelli front/rear

**Wheels** 7J x 13", OZ Racing magnesium alloy rims front/rear

**Brakes** AP Racing CP7855, Ø17.8mm bore front/AP Racing CP7855, Ø19.05mm bore rear

**Chassis** Tubular steel space frame

**Electric Motor** Fischer Elektromotoren TI085 front/rear

**Accumulator Spec** Sony VTC6 18650 cells (1s5p Energus Modules)

**Max power/max torque**  
35.4kW@xrpm/29.1 for TBC secs

**Transmission** 4x Compound epicyclic gearboxes housed inside each upright

**Differential** n/a

**Final drive** 9



## UBRACING

UBRacing is the University of Birmingham's Formula Student Team and one of the oldest team's in the UK and partly founded the UK competition. This year they are building their 25th car, a fully electric entry with the aim of being the fastest UK EV team. Founded in 1997, the team's best result was 2nd overall in 2017 and winning Dynamics event in the same year.

The team are targeting a top 5 finish and finishing endurance with an improved efficiency score. The team would like to thank their Platinum Sponsor, Neos Composites whose support of the team has been invaluable.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3090/1403/1176/1700

**Track** 1220/1145

**Car weight (approx.)** 259 (kgs.)

**Weight distribution (approx.)**  
108.8/150.5

**Suspension** Double unequal A-Arm, pull rod actuated spring and damper front/Double unequal A-Arm, direct acting spring and damper rear

**Tyres** 16x7.5x10 R20 Hoosier front/rear

**Wheels** 10"x7.5" front/rear

**Brakes** AP Racing CP7855, Balance bar, 15 mm bore front/ AP Racing CP7855, Balance bar, 15.875 mm bore rear

**Chassis** Hybrid composite monocoque and steel rear subframe

**Electric Motor** EMRAX 228 MV LC

**Accumulator Spec** Samsung INR18650-30Q

**Max power/max torque**

109kW@5000rpm/230Nm for 5 secs

**Transmission** Single 520 size chain

**Differential** Drexler 2016, FS LSD

**Final drive** 3



## UNIVERSITY OF NOTTINGHAM RACE TEAM

The University of Nottingham Race Team is passionate about working at the forefront of electric racing car development. This group of capable and determined students are looking to build on the successes of the 2021 competition, focusing on three key areas. First, reliability of the vehicle and powertrain is continually being improved through rigorous static and dynamic testing. Second, the new vehicle design is considerably lighter. Third, the second generation accumulator under development offers significantly increased power and energy densities, accomplished through a new cylindrical cell-based layout.

In parallel, UoNRT is working on the drivability and strategic aspects of the competition experience. They hope to achieve more responsive and lighter steering for the driver, and better fuel economy through smart energy consumption per lap during the endurance event. Overall, UoNRT endeavours to inspire and equip students to work towards sustainable transport (and racing!) in the future.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2544.2/1484/1146.1/1540

**Track** 1299.7/1282.2

**Car weight (approx.)** 252 (kgs.)

**Weight distribution (approx.)**  
100.8/151.2

**Suspension** Double Wishbone SLA, Pullrod front/rear

**Tyres** Continental FS C19 - 205/470 R13 front/rear

**Wheels** Three-piece 13"x7" width (1.5"+5.5") front/rear

**Brakes** AP Racing CP7855-88PRT push-type, dia 14 mm; Tilton 72-260 balance bar front/rear

**Chassis** Steel space frame

**Electric Motor** Parker USA/ GVK142-050-L/IPMSM

**Accumulator Spec** Zhuhai Hange Battery Corporation Limited HGB8665155-20C

**Max power/max torque**

36kW@20115rpm/32Nm for 10s

**Transmission** Fixed speed per-wheel reduction, single reduction planetary gearbox, fixed ring gear

**Differential** n/a

**Final drive** 9



## OXFORD UNIVERSITY RACING

Oxford University Racing (OUR) is made up of 66 students from the University of Oxford. The team is competing in Class 1 for the first time, designing and constructing a rear-wheel-drive EV race car to compete in Formula Student UK 2022. Founded in 2017, OUR's philosophy is to design a 'future-proof' car with the goals of sustainability, collaboration, and equality in mind. Since then, the team has been progressively building its size, capabilities and experience. Built upon a steel space frame chassis, the car features two 20kW in-board motors controlled by custom inverters and powered by an in-house designed 9kWh accumulator system.

OUR strives to create an open and supportive environment for all team members and is proud of the team's diversity. 44% of members are international students, with 52% of members representing minority ethnicity groups. 67% of the team studied at state schools, while 23% are first-generation university students. OUR would like to thank The Department of Engineering at the University of Oxford and our sponsors for their valuable support.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2917/1503/1267/1699

**Track** 1320/1320

**Car weight (approx.)** 330 (kgs.)

**Weight distribution (approx.)**  
130/220

**Suspension** Double Wishbone, Pushrod actuated front/rear

**Tyres** Avon A95 7.2/20-13 front/rear

**Wheels** 7" Braid Sturace Monoblock front/rear

**Brakes** 20.6 front/rear

**Chassis** Steel space frame

**Electric Motor** Plettenberg Motors / Custom Nova 15

**Accumulator Spec** e-PLB

**Max power/max torque**

15.7kW@4271rpm/39Nm for 10 sec

**Transmission** Gearbox

**Differential** n/a

**Final drive** 5



## SOUTHAMPTON UNIVERSITY FORMULA STUDENT TEAM

Southampton University Formula Student Team (SUFST) are entering this year's competition with their first electric car. SUFST would like to thank their sponsors for their support in helping the team realise their goals. The team is made up of over 200 students from a variety of course backgrounds. Having competed at Formula Student UK at Silverstone for the last 7 years, SUFST also compete in at least one European competition each year. The team is divided into technical and operational departments.

The technical departments include Aerodynamics, Structural Design, Electronics, Powertrain, Race Engineering, and Vehicle Performance. This year, the team are focusing primarily on reliability, with secondary goals of vehicle performance and driver performance. SUFST attracts a large number of students, and to better manage the intake this year, the team provides weekly CAD tutorial learning opportunities on top of their regular meetings.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2890/1500/1232/1550

**Track** 1234/1184

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
103.5/126.5

**Suspension** Pushrod actuated double-wishbone. Gas corner springs/dampers with U-bar ARB front/rear

**Tyres** 7.5x16-10 front/rear

**Wheels** 10"x7", Centre Locking, Forged Magnesium front/rear

**Brakes** AP Racing CP7855-91PTE front/rear

**Chassis** Full carbon fibre monocoque

**Electric Motor** EMRAX 228 LC HV

**Accumulator Spec** Molicel INR-21700-P42A

**Max power/max torque**

109kW@xrpm/230Nm for x sec

**Transmission** Chain drive, 501

**Differential** Drexler LSD, 40/50

**Final drive** 4.2


**UOP RACING TEAM**

UoP Racing Team from University of Patras, Greece is aiming to have a successful European tour for this year's Formula Student competitions. Established back in 2002, our team has a long history of success. Being the first Formula student team in Greece and the first one with an all electric car was for sure not an easy challenge but our team has proven multiple times its determination and has paved the way for the other Greek teams.

All of this would not be possible without it's members pure passion and determination for excellence that can overcome any setback that lies ahead. In 2019 the goal we set was on maximizing the performance of our next race car. This is the foundation that our 2022 competition entry was based on. UoP 7e is a 4wd electric racecar with a one-piece CFRP monocoque and carries a plethora of innovations, which that is why we have high hopes for this year's competition.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2850/1452/1177/1535

**Track** 1180/1180

**Car weight (approx.)** 221.0 (kgs.)

**Weight distribution (approx.)**  
88.4/132.6

**Suspension** Double Unequal-length carbon fiber A-arms, push rod front/rear

**Tyres** 16x7.5-10 R25B Hoosier front/rear

**Wheels** OZ Magnesium 10x7 ET22 front/rear

**Brakes** Tilton 78-series, bore 5/8", Tilton 600 series 3/8"-24 Balance Bar front/rear

**Chassis** Composite monocoque

**Electric Motor** AMK DD5-14-10-POW front/rear

**Accumulator Spec** Melasta SLPBA642126

**Max power/max torque**

26.4@12000rpm/21Nm for 1.24sec

**Transmission** Student-designed 2-stage gearbox

**Differential** n/a

**Final drive** 12.4567


**SDU-VIKINGS**

SDU-Vikings is a team of students pursuing degrees within engineering in the University of Southern Denmark. Their first debut was in 2007 with a combustion car. However, in 2010 they decided to switch to electric and they have been doing electric cars since then. This is their 10th car and their main goal is to improve past year's performances. To do it they designed a shorter, lower and lighter car.

This was accomplished by changing to four-wheel drive, using a self-developed AMS designed to minimize required space, using a double unequal length A-arm suspension and redesigning the chassis geometry. They would like to thank the University of Southern Denmark for its support as well as their team advisors. Also, they would like to express their gratitude to all their sponsors, each and every one of their contributions have proved to be crucial for the project's success.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2570/1384/971/1530

**Track** 1200/1200

**Car weight (approx.)** 200 (kgs.)

**Weight distribution (approx.)**  
86/114

**Suspension** Double unequal length A-arm, direct acting spring and damper front/rear

**Tyres** 6.0/16.0 -10", Avon, A92 compound front/rear

**Wheels** Braid STURACE 10x6, 1 pc Al rim front/rear

**Brakes** Tilton 78-series 15,875mm bore, bias bar front/rear

**Chassis** Tubular space frame

**Electric Motor** AMK DD5-14-10-POW front/rear

**Accumulator Spec** Melasta SLPB7785186

**Max power/max torque**

35kW@15500rpm/21Nm for 1 sec

**Transmission** Hub-mounted planetary gearbox

**Differential** Independent motors

**Final drive** 11.5:1





### ION RACING

Ion Racing is the biggest project at the University of Stavanger, and currently consists of 45 dedicated students whom give a great portion of their free time to working on our project. When our 2016 car stood ready, early summer of 2016, we found that it had taken about 40 000 working hours to finish, and the quality of our work increases year after year.

Our first car stood ready in the summer 2012, and we have since built a total of 8 cars, 6 of which have been electrical. Although most of our members are studying mechanical, electrical or computer engineering we take members from any current of previous profession. We are truly grateful to all who helps us!



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2850/100/1255/1650

**Track** 1200/1200

**Car weight (approx.)** 251.6 (kgs.)

**Weight distribution (approx.)**  
133.1/118.5

**Suspension** Double A-arm w pullrod front/Double A-arm w pushrod rear

**Tyres** Hoosier 20.5x7x13 R25B front/rear

**Wheels** 7Jx13 FH2 OZ Formula Student front/rear

**Brakes** Tilton 78-series, 5/8" dia., stroke 1,1" front/rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228 MV LC

**Accumulator Spec** Energus Li10P25RT/ Samsung INR18650-25R

**Max power/max torque**  
109kW@5500rpm/230Nm for a few secs

**Transmission** Chain drive 530

**Differential** Drexler version 1

**Final drive** 4:7



### TEAM SURTES

Team SURTES, Surrey University Racing Technology Engineering Solutions, has been competing at FSUK for over 10 years. Since 2015, Team SURTES have competed with an electric car, becoming one of the first UK EV teams to successfully pass scrutineering and complete the endurance event. 2019 saw the team's highest finish in FSUK, finishing as the highest UK EV team, 11th overall and achieving two awards: Mercedes HPP Best High Voltage Powertrain Implementation, and the Most Efficient Car. 2022 sees Team SURTES return to Formula Student after a year's absence with SE7, their seventh EV vehicle.

SE7, will feature: bodywork manufactured from Bcomp natural fibre composites, two custom planetary reduction gearboxes and a rear axle dual-motor torque vectoring system. Team SURTES are incredibly grateful to all their sponsors, alumni, workshop staff and Faculty Advisors for all their support and effort.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3200/1460/1290/1595

**Track** 1200/1200

**Car weight (approx.)** 280 (kgs.)

**Weight distribution (approx.)**  
117.6/162.4

**Suspension** Pullrod system front/ Pushrod system rear

**Tyres** Hoosier 16x7.5 - 10 R25B front/rear

**Wheels** 7" width magnesium alloy centre-locking wheels front/rear

**Brakes** AP Racing CP7854 15mm piston front/AP Racing CP7854 16.5mm piston rear

**Chassis** Tubular steel space frame

**Electric Motor** EMRAX 188 MV CC

**Accumulator Spec** A123 AMP20 M1 HD-A

**Max power/max torque**  
52kW@xrpm/90Mm for xsec

**Transmission** 2 x Direct drive with planetary gearbox

**Differential** n/a

**Final drive** 5





## UNIVERSITY OF STRATHCLYDE MOTORSPORT

As Scotland's oldest Formula Student team, USM has been designing, building, and racing single-seat race cars for 21 years. A proud legacy of combustion powered race cars ended in style last year, with a best ever finish for USM19A at FSUK21. Now, following 3 years of research and development, USM21 will arrive in Silverstone as the team's first electric vehicle entry. Driven to be part of something fast, the student-led team has grown to over 70 members, who pride themselves on a mission of delivering sustainable performance.

Along with going electric, a shift in design philosophy has meant renewed focus on design for reliability, an advanced aerodynamics package and maximising testing time with enhanced data acquisition.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
0/0/0/1535

**Track** 1200/1200

**Car weight (approx.)** 240 (kgs.)

**Weight distribution (approx.)**  
108/132

**Suspension** Double Wishbone  
- Direct Actuation front/Double Wishbone - Rocker Actuated w/ Torsion ARB rear

**Tyres** Hoosier 16x7.5 10x7 R25B front/rear

**Wheels** DWT BlueLabel Aluminium 10x7 front/rear

**Brakes** AP Racing CP7855-91PRT front/AP Racing CP7855-95PRT rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228

**Accumulator Spec** Sony VTC6

**Max power/max torque**  
62.5kW@5500rpm/198Nm for xsec

**Transmission** Single EMRAX 228

**Differential** Drexler Salisbury Type Limited Slip

**Final drive** 3.83



## SUSSEX RACING

Sussex Racing is a Formula Student team based out of the University of Sussex. For the 2022 competition we have rehauled the Formula Student set-up, nearly doubling our team size. The team is now made up of all years at the university and has a revitalised new look and ethos to propel Sussex Racing further than we have gone before.

We have also transitioned to an electric car to move up the field and start the development of this new powertrain.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2865/1558/1348/1600

**Track** 1230/1160

**Car weight (approx.)** 270 (kgs.)

**Weight distribution (approx.)**  
95/175

**Suspension** Double Wishbone  
Pullrod Suspension SLA front/Double wishbone Direct Damped SLA rear

**Tyres** 7x16-10 front/rear

**Wheels** 10x7.2 single front/rear

**Brakes** CP2623-95PRM88, bore: 23.8mm front/ CP2623-96PRM115, bore: 25.4mm rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 208 CC

**Accumulator Spec** LG HE2 18650 Li-Ion

**Max power/max torque**  
68kW@xrpm/105Nm for x secs

**Transmission** 2:1 Gearbox to 520 DID Motorbike chain drive, 27-tooth driven sprocket

**Differential** Drexler LSD V3

**Final drive** 1.8



## UNIVERSITY OF THE BASQUE COUNTRY SPAIN

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### FORMULA STUDENT BIZKAIA

The FSB2022 is the 11th electric vehicle designed, manufactured and tested by Formula Student Bizkaia in order to compete in Formula Student. The team's trajectory starts in 2008, with an IC engine single seater, which was successively improved until 2012, the year in which two vehicles were developed: one with an IC engine, and the other with an electric powertrain. Since then, the team has focused on electric mobility, considering it a key technological tool in the compromise with sustainability. During the last years, relevant implementations have been made in the technical aspects. Some of the most important milestones worth mentioning are: the first carbon fibre monocoque (2015), the implementation of two independently

controlled motors (2016), the first complete aerodynamic package (2017) or the brake energy recovery system (2019). However, the advances have not been limited to the technical part, as an educational project, FSB aims to develop an experience as close as possible to the real engineering world. This work has been reflected on the results achieved these years: 1st place in the Business Case (2013, 2017, 2018), 1st in FSS Cost Event (2021) and 2nd in Design Event (2021). The team is willing to participate in FSUK for the 15th time, and is working hard to have the best performance at this event. For that purpose, FSB has developed the first all-wheel-drive vehicle in team's history.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2898/1400/1170/1590

**Track** 1395/1405

**Car weight (approx.)** 228 (kgs.)

**Weight distribution (approx.)**  
102.6/125.4

**Suspension** Decoupled, double wishbone A-arm, pushrod front/Decoupled, double wishbone A-arm, pushrod rear

**Tyres** 16x6 - 10, LC0, Hoosier front/rear

**Wheels** B\*, 3-piece aluminium rim front/rear

**Brakes** AP Racing CP7855-88PRT, 15 mm bore front/AP Racing CP7855-905PRT, 14 mm bore rear

**Chassis** Composite monocoque

**Electric Motor** Fischer Elektromotoren TI085 front/rear

**Accumulator Spec** Melasta High Energy Density SLPBA642125 front/rear

**Max power/max torque**  
35.6kW@11600rpm/29.1Nm for x secs

**Transmission** Compound planetary gearbox

**Differential** Electronic

**Final drive** 12.25:1



## UAS ZWICKAU GERMANY

96



### WHZ RACING TEAM

"Innovation meets Tradition" - if you look at Zwickau's automotive history you can easily find out why this is the slogan of the WHZ Racing Team. Zwickau is the birth place of Horch and Audi, and furthermore in the 1930s, it was the domicile of the legendary Auto Union Typ C "Silberpfeil" race cars which dominated the race tracks in Europe. Almost 70 years later the WHZ Racing Team was founded. Now in 2021, the 11th fully electric race car is brought to the tracks.

The FP14.20e is a new development, concentrating on packaging, performance and reliability. At the moment, the team consists of about 40 members from a variety of faculties of the UAS Zwickau. This team has worked hard and efficiently to tie up on its results of 2019: 1st place at FS Czech, 3rd place at FSUK and 6th place at FS Spain. The FSE opens a door to a new dimension of racing - so let us all have fun and create the future together.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**

2988/1480/1181/1530

**Track** 1200/1200

**Car weight (approx.)** 190 (kgs.)

**Weight distribution (approx.)**  
94/96

**Suspension** Double unequal length A-Arms with Pushrod actuation front/rear

**Tyres** 16"x7.5"-10" LC0 Hoosier front/rear

**Wheels** 7.5"x10" carbon fibre self-developed front/rear

**Brakes** AP Racing CP 7855-88 PRT 14.00mm front/AP Racing CP 7855-88 PRT 16.80mm rear

**Chassis** CFRP one-piece monocoque

**Electric Motor** Fischer Elektromotoren TI085-052-070-04B x2

**Accumulator Spec** Shenzhen Melasta Battery Co., Ltd. SLPB042126HW

**Max power/max torque**  
35.366kW@11600rpm/29.1Nm for xsec

**Transmission** AWD, planetary gear

**Differential** Electronic

**Final drive** 13

**WARWICK RACING**

Warwick Racing, the University of Warwick's Formula Student Team, are a cross disciplinary team of tenacious engineers fixed on one goal: producing a performance electric racing vehicle. The team are aiming for competitive performance in the dynamics with the next generation EV, WRe2, continuing on from the success of WRe1. WRe2 features all new custom accumulator packs made in-house - a rarity amongst FS teams. Having spent much development time on motor control and facilitating torque vectoring, the batteries are expected to deliver formidable performance across all dynamic events.

Leveraging the team's experience with topology optimisation, components such as bulkheads, uprights, brackets in addition to the frame have been optimised to the lightest practical mass. This facilitates the all-new suspension geometry, steering feedback and damper technology. Warwick Racing would like to thank all those involved with the project for their ongoing support.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2680/1610/1180/1700

**Track** 1400/1360

**Car weight (approx.)** 370 (kgs.)

**Weight distribution (approx.)**  
170/210

**Suspension** Double unequal length A-Arm. Push Rod front/5 Element Multilink Push Rod rear

**Tyres** 7.2/20.0-13 Avon A92 front/rear

**Wheels** Team Dynamics 1.2 Pro, Cast Alloy front/rear

**Brakes** 15.9mm Bore front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 208 front/rear

**Accumulator Spec** A123 Pouch cells

**Max power/max torque**

68kW@xrpm/140Nm for xsecs

**Transmission** 2 x Renthal 520 Chain

**Differential** n/a

**Final drive** 4.3



**MORE MODENA HYBRID**

MMR MoRe Modena Racing was born in 2003 in the heart of the Italian Motor Valley, thanks to the initiative of 5 passionate engineering students. Over the years, the team has evolved and expanded and in 2017 the new Hybrid Team was born. A decision was taken to design a hybrid car able to pave the way to further developments in innovative powertrains. The M22-H is still the only hybrid car to compete in FSUK, and aims at delivering the same driving

experience of traditional ICE powered cars with an eye to environmental impact and improved overall performance. As a result, driveability is greatly improved, thanks to a more responsive throttle and a higher torque output. The CFRP panel-made monocoque, an innovative battery pack and full aerodynamics complete the package. More than a combustion car, more than an electric car: this car takes the best of both worlds.

**TECHNICAL SPECIFICATION****Powertrain** Hybrid**Length/height/width/wheelbase**  
2903/1480/1147/1545**Track** 1280/1240**Car weight (approx.)** 248**Weight distribution (approx.)**  
107/141**Suspension** Double unequal wishbone, pull-rod actuated through a vertical shock absorber, adjustable anti-roll bar front/rear**Tyres** 16x7.5-10/R20/Hoosier front/rear**Wheels** 10" diameter, 7" width front/rear**Brakes** Tilton 76-625, ø15.88 mm piston, proportional bar front/rear**Chassis** Composite monocoque made by flat panels glued together with a puzzle-shape pattern**Engine** Ducati 959 "Superquadro"**Electric Motor** Promo S.R.L., Custom Motor with self-designed 3D printed enclosure rear**Accumulator Spec** Sony-Murata 18650 VTC6**Bore/stroke/cylinders/cc**  
100/60.8/1/477**Fuel system** ASNU single injector, ECU controlled, with Bosch 4 bar pressure regulator**Max power/max torque**  
50kW@10500rpm/  
55Nm@8500rpm**Transmission** BMW GS derived bevel gear with machined 7075-T6 case, support and hub BMW GS derived bevel gear with machined 7075-T6 case, support and hub**Differential** Drexler FS 2010 limited slip Drexler FS 2010 limited slip**Final drive** 3.3





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**TULPAR RACING**

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**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3300/1400/1540/1705

**Track** 1200/1300

**Car weight (approx.)**  
260 (kgs.)

**Weight distribution (approx.)**  
104/156

**Suspension** Double unequal length non-parallel A-arm vertically oriented spring and damper

**Tyres** 200x75-13 R25B Slick front/rear

**Wheels** OZ Racing wheels, Aluminium

**Brakes** Floating, 220 mm diameter, 8 mm thickness, A36

**Chassis** Steel space frame

**Engine** Yamaha MT07J

**Bore/stroke/cylinders/cc**  
80/68.6/2/689

**Fuel system** OEM System with Denso Injectors - Low Pressure Injection System (LPI)

**Max power/max torque**  
55kW@9000rpm/68Nm@6500rpm

**Transmission** 525 Single Chain / Sprocket

**Differential** Drexler FSAE Limited Slip

**Final drive** 3.25


**BCU RACING**

BCU Racing is proud to be back after 2 years off in its 23rd year of Formula Student. This year it's excited to introduce a new team of students from foundation to master's degree level, proving all academic levels are welcomed. We are an incredibly diverse group of students with interests in aerodynamics, auto electronics & design and we look forward to showcasing our progress to the wider world. Putting inclusivity at the forefront of itself and highlighting the multitude of skillsets involved, BCU Racing hopes to encourage other students to sign up with non-engineering disciplines.

This year BCU Racing will be entering an IC vehicle; however, after the recent installation of a state of the art, multimillion pound EV engine test cell, we are 'geared up' more than ever to pursue greener and more sustainable solutions. It has been a long 2 years but BCU Racing is eager to compete with a new team, further develop its skillsets and make new, exciting connections. They cannot wait to join other teams and colleagues at Silverstone.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2638.6/0/0/1600

**Track** 1200/1118

**Car weight (approx.)**  
178 (kgs.)

**Weight distribution (approx.)**  
80/98

**Suspension** Double unequal wishbone, pullrod front/Double unequal wishbone, pullrod rear

**Tyres** Hoosier Racing 18x6-10 LCO

**Wheels** 10" x 6" front/rear

**Brakes** AP Racing CP8755, 0.625 inch front/AP Racing CP8755, 1.0 inch rear

**Chassis** Aluminium monocoque

**Engine** Aprilia RXV 4.5

**Bore/stroke/cylinders/cc**  
76/49.5/2/449

**Fuel system** Multi-point fuel injection

**Max power/max torque**  
38kW@11000rpm/45Nm@4000rpm

**Transmission** Chain driven

**Differential** Drexler Formula SAE specification

**Final drive** 3.00



### AUTOMAESTRO

Automaestro is a formula student team consisting of undergraduate students from BUET. As a first-year FS team, Automaestro aims to design and produce a functional, safe, and reliable FS car to compete in FSUK 2022. The team consists of Technical & Logistics sub-teams. The core responsibility of the technical team is to research, design, test and manufacture parts and components of the car while the logistics team manages sponsorships and public relationships. Automaestro previously took part in International Go-Kart

Championship-2020, achieved 1st position in Innovation Presentation & Automotive Styling Competition segments, and secured overall 9th position. Automaestro's current goal is to pass the technical scrutineering and participate in the dynamic event of FSUK 2022. Collaborative contributions of each team member ensure a planned progress each day towards this goal sharing one mutual intention: passion and love for automobiles and motorsports.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2873/1554/1318/1608

**Track** 1250/1200

**Car weight (approx.)**  
206 (kgs.)

**Weight distribution (approx.)**  
106/100

**Suspension** Unequal length double A-arm with push rod actuated horizontally oriented spring damper unit front/rear

**Tyres** 20.0x7.5-13 R25B Hoosier front/rear

**Wheels** 13" x 7, 1" - positive offset front/rear

**Brakes** Fixed mounted, dual Tilton 74 series master cylinder, aluminum alloy body, dual AN3 outlet, 3/4" bore, remote brake bias adjuster attached to balance bar front/rear

**Chassis** Steel tube space frame

**Engine** KTM Duke 390

**Bore/stroke/cylinders/cc**  
89/60/1/373

**Fuel system** Electronic fuel injection

**Max power/max torque**  
n/a

**Transmission** Chain drive 12.7mm pitch

**Differential** Open differential

**Final drive** 1.2:1



### BRUNEL MASTERS MOTORSPORT

Brunel Masters Motorsport was founded in 2004 and is comprised wholly of MSc Automotive and Motorsport Engineering students from Brunel University London. Brunel Masters Motorsport is an innovative and forward-thinking team with each member bringing their own skills and experience from diverse backgrounds.

The team has a strong history in the Formula Student Concept Class competition, and we are excited to continue working and improving as a team.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2874.5/1202/1078/1945

**Track** 1202/1202

**Car weight (approx.)**  
200 (kgs.)

**Weight distribution (approx.)**  
90/110

**Suspension** Unequal - Non Parallel Double Wishbones front/rear

**Tyres** 20.5x7x13 R25b Hoosier front/rear

**Wheels** 13x7 front/rear

**Brakes** CP7855 front/rear

**Chassis** Steel space frame

**Engine** Triumph Daytona

**Bore/stroke/cylinders/cc**  
74/52.3/3/675

**Fuel system** Bosch

**Max power/max torque**  
85.27kW@8000rpm/  
114.41Nm@6000rpm

**Transmission** 6 speed sequential gearbox

**Differential** Drexler Limited Slip

**Final drive** 2.75


**HEBRON MOTORSPORTS**

Hebron motorsports is an interdisciplinary team of young undergraduates enthusiastic about applying theories learnt on real life situations. This is our second year entry into the Formula student competition. We are currently developing a basic fuel formula style racecar. We intend to deliver a simple, cost-effective and reliable car in compliance with the FS rules. We would like to leave a word of gratitude to our partners and sponsors for investing their time, resources and products toward the delivery of the project.


**COVENANT  
UNIVERSITY**  
Abuja's No. 1 Private University
**TECHNICAL SPECIFICATION**
**Length/height/width/wheelbase**  
 2685.27/1542.3/1197.52/1600

**Track** 1240/1192

**Car weight (approx.)**  
 235.0 (kgs.)

**Weight distribution (approx.)**  
 96.35/138.65

**Suspension** Unequal Converging  
 Double Wishbone Suspension  
 System front/rear

**Tyres** 20.5x7-13 R25B Hoosier  
 front/rear

**Wheels** 7" OZ wheels front/rear

**Brakes** Willwood GS Compact,  
 5/8" size front/rear

**Chassis** Steel space frame

**Engine** Honda CBR600RR 2007

**Bore/stroke/cylinders/cc**  
 67/42.5/4/599

**Fuel system** PE-8400P EFI

**Max power/max torque**  
 53kW@10000rpm/58Nm@7000rpm

**Transmission** Chain drive 520

**Differential** n/a

**Final drive** 4.615:1

**TEAM INFINITY**

Team Infinity from Ghulam Ishaq Khan Institute aims to reach the pinnacle by being amongst the top 10 at this year's Formula Student Competition. The team was established in 2017 and has been working rigorously till date while doing exceptionally well in sub-categories. It is the only Team from Pakistan to be shortlisted for FSUK, 2022 Concept Class, and since has been working tirelessly not only to reach the top 10 finish but be amongst the Business Plan Presentation Finalists and the Finishing endurance. Team Infinity works under

the umbrella of Master Group of Industries, and Procon Engineer Limited, to which Team Leader Hafiz Umer and the team would like to give their utmost gratitude. Aside from our sponsors, the team is grateful for Faculty Advisor Dr. Waseem Ahmad Khan and Ghulam Ishaq Khan Institute for their continued support of the Formula Student Program.


**TECHNICAL SPECIFICATION**
**Length/height/width/wheelbase**  
 2400/1580/1200/1585

**Track** 1300/1200

**Car weight (approx.)**  
 232 (kgs.)

**Weight distribution (approx.)**  
 104.4/127.6

**Suspension** Double unequal control  
 arm, push rod, inclined spring & damper  
 front/rear

**Tyres** 205/470R13 dry Continental front/  
 rear

**Wheels** 1 pc construction, 7" width, 22  
 mm pos offset front/rear

**Brakes** Fixed disc 200mm front/ CP2623-  
 92RK AP Racing 19.1mm rear

**Chassis** Steel tubular space frame

**Engine** Honda CBR 600 RR

**Bore/stroke/cylinders/cc**  
 67/42.5/4/599

**Fuel system** 40mm throttle bodies

**Max power/max torque**  
 87.6kW@13500rpm/  
 66Nm@11225rpm

**Transmission** Chain (520)

**Differential** Drexler Adjustable Limited  
 Slip

**Final drive** 3.20



## DEMOCRITUS UNIVERSITY OF THRACE GREECE

# 232

### DEMOCRITUS RACING TEAM - DRT

Democritus Racing Team is the formula student team of Democritus University of Thrace, based in Xanthi, Greece. We design, construct and race formula-style, single-seat race cars and compete in the international student competitions organized by the Society of Automotive Engineers (SAE International), facing teams from all around the world. We strive to create an incubator of knowledge, creation and technological advancement, within our university, from which our members, our supporters and society can benefit.

### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
n/a  
**Track** n/a  
**Car weight (approx.)**  
n/a (kgs.)  
**Weight distribution (approx.)**  
n/a  
**Suspension** n/a  
**Tyres** n/a  
**Wheels** n/a  
**Brakes** n/a  
**Chassis** n/a  
**Engine** n/a  
**Bore/stroke/cylinders/cc**  
n/a  
**Fuel system** n/a  
**Max power/max torque**  
n/a  
**Transmission** n/a  
**Differential** n/a  
**Final drive** n/a



## ISLAMIC UNIVERSITY OF TECHNOLOGY BANGLADESH

# 283

### TEAM FORMULA IUT

Team Formula IUT from the Islamic University of Technology will be aiming for a breakthrough performance in this year's Formula Student competition as a new entrant. Established in 2021, the first FSAE team from the Institution has been preparing their vehicle with a strong hold on manufacturability since their inception. Beyond manufacturability, the first vehicle from the team channels functionality, simplicity and performance as the main point of focus. As the team will be representing Bangladesh at Formula Student UK, the team

has opted for a system that maintains cost-effectiveness in the perspective of Bangladesh. The team will also be presenting a business proposition that sets to meet the country's specific demands. The team's well defined business plan has a target to reach the finals of the Business Plan Presentation. With competence and meticulousness they are determined to ensure successful execution.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3181.47/1409.83/1039.52/1704.37  
**Track** 1299.85/1281.73  
**Car weight (approx.)**  
280 (kgs.)  
**Weight distribution (approx.)**  
112/168  
**Suspension** Unequal non parallel double A-arms, pushrod, horiz. coilover front/pullrod, vertical coilover rear  
**Tyres** 185/70 R13 AA01 Yokohama front/rear  
**Wheels** 13"x3" front/rear  
**Brakes** TandemType front/rear  
**Chassis** Steel space frame  
**Engine** Yamaha YZF R6  
**Bore/stroke/cylinders/cc**  
65.5/44.5/4/600  
**Fuel system** OEM NIPPON Port Injection  
**Max power/max torque**  
80.9kW@8000rpm/  
60.5Nm@7000rpm  
**Transmission** Chain Drive 520  
**Differential** Drexler LSD  
**Final drive** 3.00


**MANSOURA MOTORSPORT**

Mansoura Motorsport is the representative of Mansoura University and the first Egyptian team, established in 2013 by a group of engineering students full of passion towards automotive engineering. The team has competed in 8 competitions and manufactured 6 vehicles so far, and our goal is to spread awareness of the automotive industry inside Egypt and inside the faculty of engineering - Mansoura University specifically.

The biggest challenge that we face entering this field in particular is that there isn't a specific faculty for automotive engineering at Mansoura University. We do this through continuous research and improvement of the team members both on technical and personal levels, and this helps prepare students for the job market. We strive to continue entering and to achieve greater positions in the coming years in all the competitions.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2999/1496.2/1204/1550

**Track** 1193/1162

**Car weight (approx.)**  
206 (kgs.)

**Weight distribution (approx.)**  
119.48/86.52

**Suspension** Double Unequal A-Arms - Pull rod (Indirect Actuation). front/rear

**Tyres** 18x6-10 D18.1/Hossier R25B front/rear

**Wheels** 10" x 6" with 4.25 offset front/rear

**Brakes** n/a

**Chassis** Steel space frame

**Engine** Honda CBR f4i/2004

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Honda stock multipoint fuel injectors

**Max power/max torque**  
84kW@13000rpm/68Nm@67rpm

**Transmission** Chain /sprocket with Rear drive axle

**Differential** LSD

**Final drive** 4


**QUEEN MARY FORMULA STUDENT**

Queen Mary Formula Student are competing as part of a two year process aiming to come in as a top 10 this year as a concept class entry this season as an opportunity to redesign the car from the ground up through data based design for testing and verification. This year, the team was able to test, and prototype designs, as well as secure funding for the next year and reinstate all support prior to COVID-19. First competing in 2016, the team has consistently come as 19th overall. This year, their time has been a focus on redesigning the suspension,

aerodynamics and making sure they have a working dependable car that will be finishing endurance in the next season. The team would like to thank their sponsors Siemens, IPG and LucasOil as well as Faculty Advisor Dr Zawahreh, the QMSU and Queen Mary University of London for their continued support of the Formula Student programme.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3722/1377/1500/1590

**Track** 1200/1185

**Car weight (approx.)**  
248 (kgs.)

**Weight distribution (approx.)**  
118/130

**Suspension** Double A Arm Wishbone front/rear

**Tyres** 20.5 x 7.0-13/R25B/Hoosier front/rear

**Wheels**

**Brakes** 198 mm^2 front/285 mm^2 rear

**Chassis** Steel space frame

**Engine** Honda CBR600RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Manifold port injection

**Max power/max torque**  
n/a

**Transmission** 520 Chain

**Differential** Drexler LSD

**Final drive** 3.80





## NILE UNIVERSITY EGYPT

### RESEARCH PROJECT MONITORING CLUB

Research Project Monitoring Club (RPM) is a student organization at Nile University in Egypt. The purpose of this organization is to support undergraduate students. It provides a chance for them to apply their theoretical knowledge to practical applications. RPM consists mainly of two teams, a racing, and a robotics team.

The racing team participated in the Electric Vehicle Egyptian Rally competition (EVER) in 2019, where they won first place in the shell business plan competition. After that, they participated again in 2020, where they won first place in the car's performance.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3175/1520/1225/1700

**Track** 1300/1300

**Car weight (approx.)**  
250 (kgs.)

**Weight distribution (approx.)**  
100/150

**Suspension** Double wishbone front/rear

**Tyres** 20x7.5-13 R25B Hoosier front/rear

**Wheels** 8" front/rear

**Brakes** n/a

**Chassis** Steel space frame

**Engine** Honda CBR600RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Stock CBR600 injectors

**Max power/max torque**  
87.2kW@6000rpm/  
66Nm@6000rpm

**Transmission** Chain, 1.22m

**Differential** Drexler LSD

**Final drive** 4.25:1



## SAKARYA UNIVERSITY TURKEY

### SAKARYA RACING

Sakarya Racing was founded in September 2021. Our team consists of 16 active student members and over 50 students in the reserve team, involving students from mechanical engineering, industrial engineering, electrical and electronic engineering. Our vehicle and performance strategy is to manufacture a high-performance auto-cross vehicle and we are planning to optimise the weight of the design every part in the vehicle. To make sure that our vehicle will give the best driving experience we are

going to build the critical parts, especially unsprung mass and rotating parts, from low-weight materials like carbon fibre, magnesium, aluminium etc. On the other hand, to lower the manufacturing cost and increase the sustainability of our vehicle we will build our car's frame using steel tubes and acquire major parts like the engine, ECU, differential, dampers, etc. through suppliers to decrease our initial investment, as designing and manufacturing these parts is not economical.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2546/1390/1157/1750

**Track** 1200/1170

**Car weight (approx.)**  
230 (kgs.)

**Weight distribution (approx.)**  
103/127

**Suspension** Double unequal length non-parallel A-arm push rod actuated horizontally oriented spring and damper front/rear

**Tyres** 20.0x7.5-13/Hoosier R25B/0/0 front/rear

**Wheels** OZ Racing 13"- 30 mm Offset front/rear

**Brakes** Dual Wilwood 17.5 mm bore, Balance Bar for proportioning front/rear

**Chassis** Body over frame

**Engine** Honda CBR600RR / 2010

**Bore/stroke/cylinders/cc**  
67/42.5/4/600

**Fuel system** MoTeC System with Denso Injectors, indirect injection

**Max power/max torque**  
77 kW @ 13900 rpm/kW@73 kW @ 13900 rpm/rpm/58 Nm @ 11400 rpmNm@55 Nm @ 11400 rpm/rpm

**Transmission** Single 520 Chain/Sprocket

**Differential** Draxler LSD

**Final drive** 4.07:1

**SWANSEA UNIVERSITY RACE ENGINEERING**

The SURE team from the Swansea University will be aiming for a top 20 finish at this year's competition for their most successful campaign to date. Since the team's formation in 2001, the team has offered a great platform for all race car enthusiasts to develop their personal and

professional skills, leading to jobs in prominent motorsport and automotive companies. The team consists of around 50 members, with 11 committee members, and our goals this year are to build a strong and reliable car capable of scoring in the top 10 in all dynamic events.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2872/1345/1135/1615

**Track** 1125/1085

**Car weight (approx.)**  
237 (kgs.)

**Weight distribution (approx.)**  
101.5/135.6

**Suspension** Non-Parallel unequal length wishbones front/Non-Parallel unequal length wishbones rear

**Tyres** 13"/R25b/Hoosier front/13"/R25b/Hoosier rear

**Wheels** 22x8.0-13 front/rear

**Brakes** AP racing, 19.1mm Bore, Trunion Bar front/rear

**Chassis** Aluminium honeycomb monocoque, rear steel space frame hybrid

**Engine** Yamaha MT-07

**Bore/stroke/cylinders/cc**  
80/68.6/2/689

**Fuel system** DTA Fast S100pro sequential fuel injection, sequential ignition

**Max power/max torque**  
55kW@9000rpm/69Nm@6400rpm

**Transmission** Chain driven, 525 pitch using two chainrings

**Differential** Drexler LSD

**Final drive** 2.5:1

**NCME RACING**

Team NCME RACING from the University of Bolton are aiming to make their debut car a successful starting point to pave the way for years to come. Having tried to get to the event for the last few years, the students were faced with the effects of COVID which made completion tough. Now with full access to the facilities on site, completion is in sight and the team also has ambition to succeed in the static events. The students wish to thank their peers and support given by the University of Bolton towards the Formula Student programme.

The S22 car has been built around a Yamaha MT07 parallel twin engine, with a linear power delivery via a crossplane crankshaft and with impressive low-end torque, giving it strong foundations. S22 has been designed with previous years success in mind, boasting improved suspension geometry built from the ground up to provide optimum grip and control for the driver. The team also plan to continue their Static events success from previous years and continue to educate all team members during, and beyond their degree courses."

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2124/1650/1250/1833

**Track** 1606/1633

**Car weight (approx.)**  
250.0 (kgs.)

**Weight distribution (approx.)**  
100/150

**Suspension** Double wishbone set up front/rear

**Tyres** 17x55 R13 AO48 YOKOHAMA front/rear

**Wheels** 13x6" front/rear

**Brakes** n/a

**Chassis** Space frame

**Engine** Honda CBR600RR

**Bore/stroke/cylinders/cc**  
67/42.5/4/600

**Fuel system** Stock Honda

**Max power/max torque**  
58kW@10500rpm/55Nm@9000rpm

**Transmission** Chain 525

**Differential** IB 5 ATB

**Final drive** 2.875

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UNIVERSITY OF CYPRUS  
CYPRUS

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## FORMULA RACING TEAM UNIVERSITY OF CYPRUS

Formula Racing Team University of Cyprus (FRTUCY) is a team from the University of Cyprus and is competing for the third time in Concept Class. The team was created in March 2019 by a group of ambitious Mechanical Engineering students and last enjoyed success in the 2021 competition with their highest placed finish of 20th overall IC Concept Class, with a 2nd place in the Business Plan Presentation event. Currently, the team consists of more than 50 young undergraduate students from both the Mechanical and Electrical Engineering departments, together with students from the Business and Public Administration departments.

The team has established strong collaborations with companies in various fields including Computer-Aided Engineering and Electronics Control, Robotics, Advanced Material Technologies and Prototyping. For the 2023 event, FRTUCY look forward to participating in the dynamic events and have the team's unique vehicle race at Silverstone. The team would like to thank all their sponsors, as well as Faculty Advisor Dr. Ioannis Ioannou and all academic personnel at the Department of Mechanical and Manufacturing Engineering of the University of Cyprus for their continued support of the Formula Student programme.



## TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3067/1382/1272/1730

**Track** 1096/1286

**Car weight (approx.)**  
401 (kgs.)

**Weight distribution (approx.)**  
166.98/234.42

**Suspension** Double unequal wishbone, pull-rod front/push-rod rear

**Tyres** P185/60 R13 Proxes R888 Toyo front/rear

**Wheels** 7J, R13 front/rear

**Brakes** AP Racing CP4226D27

**Chassis** Steel space frame

**Engine** Suzuki GSXR600

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Bosch Multipoint

**Max power/max torque**

81kW@13100rpm/

63.3Nm@11300rpm

**Transmission** Chain 525, 6 speed manual

**Differential** Quaife Helical LSD

**Final drive** 4.00



**TEAM DERBY MOTORSPORT**

Team Derby Motorsport entered this competition for the first time in 2015 and won the Formula Student Rookie Team Award. This success resulted in a £3,000 grant for the team from the IMechE. We've taken part in both Class 1 and Class 2 competitions in the past, and, in 2022, we are taking part in Class 2 again.

Now called Concept Class, our team will be presenting a finalised design and business plan to the judging panel with the aim of then producing the physical car for the 2023 Class 1 competition.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
n/a

**Track** n/a

**Car weight (approx.)**  
n/a (kgs.)

**Weight distribution (approx.)**  
n/a

**Suspension** n/a

**Tyres** n/a

**Wheels** n/a

**Brakes** n/a

**Chassis** n/a

**Engine** n/a

**Bore/stroke/cylinders/cc**  
n/a

**Fuel system** n/a

**Max power/max torque**  
n/a

**Transmission** n/a

**Differential** n/a

**Final drive** n/a

**USW RACING**

USW Racing is the Formula Student team supported by the University of South Wales. We're incredibly proud to be joining the small group of Welsh teams and we will promote Welsh language throughout our campaign. Formed of members from across the Engineering and Business school we aim to compete in FUK for the first time, as well as other Formula Student competitions across Europe. With a completely new team of people, the project has been reinvented for 2022, effectively starting from scratch after Covid which has

been a daunting but exciting challenge. The competitive nature of the event drives us to push our small team as hard as we can to try and compete on a level with larger universities. We are hugely proud of what we have achieved so far in a short space of time and look forward to meeting you all at Silverstone. Diolch yn fawr.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
n/a

**Track** n/a

**Car weight (approx.)**  
n/a (kgs.)

**Weight distribution (approx.)**  
n/a

**Suspension** Double wishbone front/rear

**Tyres** n/a

**Wheels** n/a

**Brakes** n/a

**Chassis** Steel space frame

**Engine** Yamaha R6

**Bore/stroke/cylinders/cc**  
65.5/44.5/4/599.8

**Fuel system** Standard Yamaha

**Max power/max torque**  
93.4kW@14500rpm/  
59.4Nm@11500rpm

**Transmission** Chain

**Differential** Drexler LSD

**Final drive** n/a

**UPRACING IC**

UPRacing IC is presenting the University of Portsmouth's 14th internal combustion vehicle design; the UPR-14. Building on the experience gained from the team's first Concept Class submission in 2020 and having previously competed as a Formula Student Class team, UPRacing IC is hoping to score the highest points finish in the university's history with internal combustion vehicles before leading into a full car entry in 2023/4. The three years spent at a Concept Class have given the team a chance for a full

design refresh, building on the many years of experience within the team, whilst being able to present a whole new idea, creating a solid foundation of engineering knowledge. We would like to acknowledge everyone who has supported our journey. To our sponsors, partners, alumni, friends and supporters we thank you, and are excited to move forward together.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3035/1466/1184/1611  
**Track** 1225/1217  
**Car weight (approx.)**  
190.7 (kgs.)  
**Weight distribution (approx.)**  
87.5/103.2  
**Suspension** Push Rod, unequal unparallel wishbones, directly mounted shocks front/rear  
**Tyres** 20.5"-7" R25B Hoosier front/rear  
**Wheels** 13"x7" Braid Sturace front/rear  
**Brakes** APRacing CP7855, 14mm w balance bar front/15.9mm w balance bar rear  
**Chassis** Tubular steel space frame  
**Engine** KTM 690 Duke  
**Bore/stroke/cylinders/cc**  
102/80/1/653.7  
**Fuel system** Bosch EV14 750cc  
**Max power/max torque**  
45.9kW@8370rpm/  
65.1Nm@6720rpm  
**Transmission** 520 chain  
**Differential** Drexler SAE LSD  
**Final drive** 3.77

**UWR FORMULA STUDENT**

UWR Formula Student is a small, well-driven, Telford-based team. This is UWR FS' 7th year of entry, achieving our best overall finish in 2017 and best design score in 2021. 2022 sees us change to Concept Class, which has allowed the team to develop the car further and we look to a successful 2023 campaign. The new chassis and suspension design paired with a reliable Yamaha R6 engine means that the Wolf VII should have strong foundation for the team develop a strong reliable car for 2023. The team is also investing a lot of

their time to ensure that we will complete all static events to a higher standard and achieve high point-scoring years in 2022 and 2023. Wolf VII involves some new design ideas, including a new intake system, which is hoped to be prototyped in the coming weeks. UWR FS and Team Leader Jamie Garratt and Deputy Team Leader Tryggvi Eidsson would like to thank the continued support from HUB Le BAS and Laser Process for allowing us to reach this point.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2600/1330/1030/1525  
**Track** 1152/1152  
**Car weight (approx.)**  
145 (kgs.)  
**Weight distribution (approx.)**  
57.1/82.2  
**Suspension** Pushrod, Unequal length double wishbone, combined spring and damper front/rear  
**Tyres** 7x16-10 Slick A92 Avon front/rear  
**Wheels** 10" x 8" front/rear  
**Brakes** AP Racing CP7855, Adjustable Balance bar front/rear  
**Chassis** Steel space frame  
**Engine** Yamaha R6  
**Bore/stroke/cylinders/cc**  
67/0/4/599  
**Fuel system** Standard Yamaha  
**Max power/max torque**  
51.48kW@12558rpm/  
32.6Nm@9810rpm  
**Transmission** Chain driven  
**Differential** Drexler Plate LSD  
**Final drive** 4.00





AIN SHAMS UNIVERSITY  
EGYPT

250

### ASU RACING

Ain Shams University Racing Team was founded in 2010 with the aim of reviving the automotive industry in Egypt. The team consists of multidisciplinary students all aiming to design a formula student vehicle. The team is structured according to the design requirements and later restructured to accommodate the competition events.

This year the team will be targeting a solid performance in concept class static events as the vehicle is designed with a certain philosophy and reasonable targets aiming to decrease the weight, lower the CG while increasing the overall performance. The vehicle features an Emrax 228 with peak torque of 230 N.m and Continuous torque of 120 N.m.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3017.05/1469.3/1194.9/1700

**Track** 1208.9/1228

**Car weight (approx.)** 210 (kgs.)

**Weight distribution (approx.)**  
94.5/115.5

**Suspension** Double Wishbone unequal arm length suspension with push rod. front/rear

**Tyres** 18x7.5-10 R25B Hoosier front/rear

**Wheels** Braid 10x7.5 ET33, Spin-Forged aluminum wheel Braid Sturace aluminum 10" Rims front/rear

**Brakes** CP-7855 master cylinder, piston diameter 19.11 mm, 0.62:0.38 front to rear bias ratio front/rear

**Chassis** Monocoque

**Electric Motor** Emrax 228 Medium Voltage Combined Cooled

**Accumulator Spec** Samsung INR18650-25R Cylindrical

**Max power/max torque**

80 kW at 5500 RPM, n/a

**Transmission** Single 525 Chain Drive

**Differential** 2010 FSAE Drexler Limited Slip Differential

**Final drive** 3

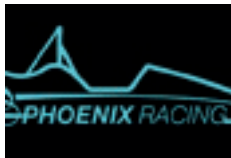


COVENTRY UNIVERSITY  
UK

287

### COVENTRY UNIVERSITY PHOENIX RACING

Phoenix Racing is Coventry University's Concept Class entrant to the IMechE Formula Student competition.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2795/1485/0/1540

**Track** 1365/1365

**Car weight (approx.)** n/a (kgs.)

**Weight distribution (approx.)**  
n/a

**Suspension** Magnesium Alloy front/Magnesium Alloy rear

**Tyres** 18x6.0-10 / LC0 Road Racing/ Hoosier front/rear

**Wheels** 10" Diameter, 7" Width front/rear

**Brakes** AP racing CP2624-91 17.8mm bore front/rear

**Chassis** Space frame

**Electric Motor** AMK DD5-14-10 POW front/rear

**Accumulator Spec** Enepaq front/rear

**Max power/max torque**

35KW@16000 front/21Nm for 1.4 sec

**Transmission** Direct drive - gear reduction

**Differential** 0

**Final drive** 16

**ASTON RACING**

Aston Racing is a Formula Student Team based in Birmingham UK. For the past few years, Aston Racing has been putting to the test fast, reliable and affordable racing combustion vehicles. This year, it was decided to start the work to develop an electrical vehicle under the experienced guidance of the Aston University faculty. A well-rounded team of Electrical, Electronic and Mechanical engineers was created to kickstart the Aston EV.

The work to be done will be focused on engineering the first version of an Accumulator, Quad motor and inverter system, driver controls, car chassis, and cooling system. The overall aim of this team is to engineer a reliable and safe electrical vehicle. If time will allow, effort will be invested into adding a torque vectoring feature to the EV.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase** n/a  
**Track** n/a  
**Car weight (approx.)** n/a (kgs.)  
**Weight distribution (approx.)** n/a  
**Suspension** n/a  
**Tyres** n/a  
**Wheels** n/a  
**Brakes** n/a  
**Chassis** n/a  
**Electric Motor** AMK front/  
**Accumulator Spec** Sony VTC6A 21700  
**Max power/max torque** n/a  
**Transmission** n/a  
**Differential** n/a  
**Final drive** n/a

**DMU RACING ELECTRIC**

DMU Racing Electric from De Montfort University will be aiming for a top 15 finish in the concept classification. The aim to is make a good concept this year and then manufacture an electrical car next year. We would like to thank all our faculty staff, sponsors and supporters.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase** 2900/650/1200/1525  
**Track** 650/650  
**Car weight (approx.)** 249 (kgs.)  
**Weight distribution (approx.)** 118.5/130.75  
**Suspension** Double wishbone push-rod front/rear  
**Tyres** 18x10x6" Hoosier LC0 front/rear  
**Wheels** 10" x 7" front/rear  
**Brakes** n/a  
**Chassis** Steel spacef rame  
**Electric Motor** Emrax 228  
**Accumulator Spec** Samsung 25R  
**Max power/max torque** 101 kW at 5500 RPM / 230 Nm for X secs  
**Transmission** Chain  
**Differential** Drexler Formula student V3  
**Final drive** 4.38

**ESTACARS**

ESTACARS is a French team with students from ESTACA Laval. The team was created in 2011 and consists of 20 automobile engineering students divided into 2 departments, powertrain & embedded systems and mechanical. The team first competed in the "Trophée SIA", a former French equivalent of the Formula Student. With the end of this competition in 2013, the team continued competing in the Formula Student category through the Formula ATA and now the FSUK.

This year the team will be participating in the concept class with its third car, the FSE03, which will then participate in the FS electric class for the 2023 season. The objectives for the FSE03 project are, to set clear targets and build a simple vehicle that achieves these targets and to learn from the feedback of the previous competitions & vehicles. The main objective of the team for this year's competition is to present the fully completed conception of the FSE03 that complies with the rules and achieves the set targets.

**TECHNICAL SPECIFICATION****Length/height/width/wheelbase**

2840.39/1382.45/1153.45/1600

**Track** 1200/1200**Car weight (approx.)** 245 (kgs.)**Weight distribution (approx.)**

114.24/123.76

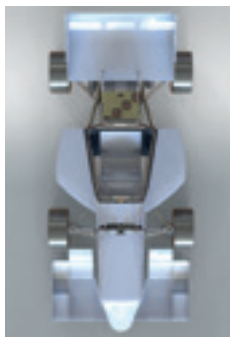
**Suspension** Double wishbone with transversal pushrods and no anti-roll bar front/rear**Tyres** 20.5x7.0-13 R25B Hoosier front/rear**Wheels** 13" Aluminium front/rear**Brakes** Aerotec Aluminium**Chassis** Tubular space frame**Electric Motor** EMRAX 228 Axial Flux**Accumulator Spec** Energus Power Solutions Built from Sony US18650VTC6**Max power/max torque**

53 kW at 5500 RPM / 230 Nm for 10secs

**Transmission** Chain with a differential**Differential** Drexler FS2010 V1 LSD**Final drive** 3.5**APEX RACING TEAM**

Apex Racing Team is a group of Egyptian students from the Higher Technological Institute, interested in the vehicle industry especially electric racing cars. Initially, the team started to spread the awareness of electric vehicle rise in the institute using social media, offline campaigns, orientations, and learning phase for the students who showed an interest in joining the team. We have made some sessions in schools to teach the coming generations about electric cars and how it would improve our environment. In the past four years, the team competed nationally four

times in EVER three times in FSUK concept class. We also participated once in GEVC and Shell Eco Marathon. For this year, the team would continue competing in FSUK, EVER, GEVC and Shell Eco marathon. The team's goal is to manufacture a car that can compete in FS Class at Silverstone, so the team aimed to improve aerodynamics, power to weight ratio, and overall weight. We are searching for sponsors that can afford the vehicle manufacturing cost. Hopefully, the team would change from Concept Class to FS Class.

**TECHNICAL SPECIFICATION****Length/height/width/wheelbase**

2972.92/1393.8/1380.15/1530

**Track** 1200/1170**Car weight (approx.)** 182.5 (kgs.)**Weight distribution (approx.)**

89.21/93.34

**Suspension** Unequal length Converging A-arms, Push-rod upper arm Actuated front/rear**Tyres** Hoosier 16X7 10in R25B front/rear**Wheels** 10" x 7" Braid carbon fiber front/rear**Brakes** 15.5 (mm) bore size with adjustable bias bar front/rear**Chassis** Tubular space frame**Electric Motor** AMK DD-14-10-POW(A2370DD) synchron front/rear**Accumulator Spec** Shenzhen Grepow Battery co. LTD pouch cell**Max power/max torque**

12.3 KW at 12000 RPM front, 12.3 KW at 12000 RPM rear/21 front, 21 rear

**Transmission** Four wheel drive system**Differential** n/a**Final drive** 14.0:1



HERIOT WATT UNIVERSITY  
UK

205 

### HW RACING

2022 will be an exciting year as it will mark Heriot-Watt Dubai's first entry into the Formula Student Competition. Over the course of the year, Heriot-Watt Dubai and Heriot-Watt Edinburgh have been collaborating, using past knowledge and experience to facilitate the design of the first Concept Class Entry. The team is made up of approximately 5 members in Dubai and Edinburgh with students working across continents as well as time zones ensuring a truly global collaboration.

For the initial year the team have decided to focus on the fundamentals of design and manufacturability of components ensuring high transfer of knowledge between members, giving the team a good base to build upon in the future. Heriot-Watt Dubai Formula Student is excited to be given the opportunity to participate in such a well-known and global event.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2192/1505/1179/1540

**Track** 1300/1240

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
115/115

**Suspension** Unequal length Double A-Arm front/Unequal length Double A-Arm rear

**Tyres** Hoosier 16" R25B front/rear

**Wheels** Oz FS Magnesium CL 10" front/rear

**Brakes** AP Racing CP7855 Master Cylinder front/rear

**Chassis** Tubular steel space frame

**Electric Motor** EMRAX 228, Liquid Cooled

**Accumulator Spec** Samsung INR18650-25R

**Max power/max torque**

100kW at 5000 rpm rear/250Nm for <5 Seconds rear

**Transmission** Electric Motor, Sprocket Gear, Chain

**Differential** Spool and Sprocket

**Final drive** 3.4



HONG KONG POLYTECHNIC UNIVERSITY  
HONG KONG

290 

### HK POLYU RACING

HK PolyU Racing from the Hong Kong Polytechnic University will be debuting in Formula Student UK Concept Class in the 2022 season. The team was founded back in 2015 and has participated in Formula Student Electric China for seasons 2017, 2018 and 2019. To push the teams abilities we decided to participate in events outside China. In FSEC our aerodynamics design has been applauded for its quality build and design. We are now aiming to improve power and reliability of our vehicle.

Team Captain KIM JaeYoun, Deputy Captain FUNG Kin Hei along with our entire team would like to thank our sponsors, Team Advisor Ir Tang Wai Fong Elsa and the Hong Kong Polytechnic University for their continued support for our team.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
3215.75/1390.5/1190/1600

**Track** 1200/1200

**Car weight (approx.)** 250 (kgs.)

**Weight distribution (approx.)**  
112.5/137.5

**Suspension** Double Wishbone, Push Rod to damper front/Double Wishbone, Rocker arm damper rear

**Tyres** Continental 205/770 R13 front/rear

**Wheels** OZ 13 inch Magnesium wheels front/rear

**Brakes** AP Racing, CP4226d27, APH420 (SBS, styrenic thermoplastic elastomer) front/rear

**Chassis** Tubular chassis

**Electric Motor** EMRAX 188

**Accumulator Spec** GRPA175175-10C-3.8V 16800mAh

**Max power/max torque**

52 kW at 6500 RPM / 90 Nm for 3 secs

**Transmission** 1-stage planetary gearbox

**Differential** n/a

**Final drive** 5.5:1

**IMPERIAL RACING GREEN**

Having missed the Formula Student UK competition last year due to the impact of the COVID pandemic, Imperial Formula Racing is returning in 2022 to compete in the Concept Class with its latest design, EV22. The car has been designed with simplicity in mind to minimise cost and risk.

With the majority of team members being new to Formula Student, the aim this year is for a successful Concept Class entry to be a springboard for a future entry with a completed car.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2620/1460/1120/1550

**Track** 1245/1235

**Car weight (approx.)** 210 (kgs.)

**Weight distribution (approx.)**  
100/110

**Suspension** Unequal Converging Wishbones, Pushrod, U-bar ARB front/Unequal Converging Wishbones, Pushrod, U-bar ARB rear

**Tyres** Hoosier R25B, 18"x7.5" front/Hoosier R25B, 18"x7.5" rear

**Wheels** Cast Magnesium, Centerlock, 10"x7"

**Brakes** Cast Magnesium, Centerlock, 10"x7"

**Chassis** Steel Spaceframe

**Electric Motor** EMRAX 228

**Accumulator Spec** Sony Murata VTC6 18650

**Max power/max torque**

100kW at 5000 rpm / 230 Nm for a few seconds

**Transmission** Chain, tensioning via "eccentric" mounting of differential

**Differential** Limited Slip

**Final drive** 3.5

**TM RACING**

TM Racing is proud to have been the first ever Mexican team to compete in Formula Student UK. The team consists of a passionate group of multidisciplinary students from Tecnológico de Monterrey (ITESM) based in Mexico City. TM Racing's main objective is to develop electric racing cars that are competitive internationally, sustainable and reliable. It's current ambitions are to represent Mexico in FSUK for the 4th time.

Thereby providing new and challenging opportunities for Mexican students that put their skills to the test and give them professional experience. The team strongly believes in the brilliance and potential of Mexican talent, which through this competition can gain exposure in the world of motorsports. TM Racing is eager to participate in the 2022 FSUK competition to prove their skills.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**

2601.19/1356.84/1317.63/1525

**Track** 1120/1120

**Car weight (approx.)** 180 (kgs.)

**Weight distribution (approx.)**  
72/108

**Suspension** Independent suspension, using A control arms and pushrod system, controlled by an anti-roll bar front/Independent suspension, using A control arms and pushrod system rear

**Tyres** Hoosier 457.2 x 190.5-254 front/rear

**Wheels** 8" 2 piece Blackwace carbon rims, front/rear

**Brakes** Tilton 78 series

**Chassis** Tubular frame TIG welded by node

**Electric Motor** EMRAX 228

**Accumulator Spec** Sony VTC6- Energus Solutions

**Max power/max torque**

109kW at 6500RPM, 100.224 kW for 40 sec

**Transmission** 0.5 Roller diameter

**Differential** Adjustable Limited Slip Differential

**Final drive** 2.7:1





## INSTITUTO POLITÉCNICO DE SETÚBAL PORTUGAL

# 420

### TEAM FSIPS

Team FSIPS from the Polytechnic Institute of Setúbal will be aiming for a top five finish at this year's Formula Student concept competition for their most successful campaign to date. Established in 2008, the team last participation in any competition was in 2010 Formula Student UK concept class with their highest placed finish of 12th overall and with an internal combustion engine. Since 2021, the team is working hard every day to develop their new prototype vehicle FSIPS\_01. As well as a top five finish, the team will target to win at least one of the three categories of the concept class event.

Team Leader André Amaral and the team would like to thank their sponsors CDS Engineering, IEFP, Altair, Althima and Milwaukee as well as Faculty Advisor Professor Dr. Ricardo Cláudio, Professor Dr. Paulo Moita, Professor Dr. Aníbal Valido and every other Professor that helped along this year long journey. A special thanks to The Polytechnic Institute of Setúbal for their continued support of the Formula Student programme.

### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2500/1775/1200/1650

**Track** 1650/1775

**Car weight (approx.)** 204 (kgs.)

**Weight distribution (approx.)**  
81.6/122.4

**Suspension** Short-Long A-Arms; Pullrod actuated front/Short-Long A-Arms; pushrod actuated rear

**Tyres** Continental 205/540R13 DRY/WET front/rear

**Wheels** 6x13" composite, built with 3 moulds, front/rear

**Brakes** Push type; 16,8mm bore size; bias bar front/Push type; 17,8mm bore size; bias bar rear

**Chassis** Space frame

**Electric Motor** Emrax 208 Low Voltage

**Accumulator Spec** Samsung SDI / NMC

**Max power/max torque**  
68 kW at 5,000RPM / 140 Nm for a few seconds

**Transmission** Chain

**Differential** n/a

**Final drive** 6:1



## THE UNIVERSITY OF HONG KONG HONG KONG

# 188

### HKU RACING

Established in 2018, HKU Racing (HKUR) from The University of Hong Kong will be running a full vehicle entry for the very first time. Following a successful first entry in class 2 event in 2019, finishing 3rd overall, the team is looking to obtain a solid result in FS2020. This year we focus on reliability and manufacturability. The team would like to thank the university and generous sponsors for their support and encouragement



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2811/1453/1200/1530

**Track** 1240/1207

**Car weight (approx.)** 211.5 (kgs.)

**Weight distribution (approx.)**  
95.157/116.325

**Suspension** Double wishbone, Pushrod front/rear

**Tyres** Hoosier 16.0 X 7.5 -10, LCO front/rear

**Wheels** 7" x10 et+22, Mg, casted front/rear

**Brakes** AP racing CP7855 bearing mounted, 14mm, AP racing CP5500 balance bar front/AP racing CP7855 bearing mounted, 19.1mm, AP racing CP5500 balance bar rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 208 medium voltage liquid cooled

**Accumulator Spec** Microvast

**Max power/max torque**  
68kW@6000rpm/140Nm for 60 sec

**Transmission** Chain with 520

**Differential** Drexler adjustable Formula Student

**Final drive** 20:24


**UCDFS**

UCD Formula Student is an independent, student run project competing in an annual student racing competition at the Silverstone Circuit in the UK. UCDFS compete in the Electric division of Formula Student. We firmly believe that electric vehicles are the future of the automotive industry and motorsport.

The UCDFS team is divided into Mechanical, Electrical and Business teams. Within these teams are specialised roles fulfilled by dedicated, uniquely skilled UCD students.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2760/1440/1280/1560

**Track** 1200/1220

**Car weight (approx.)** 202 (kgs.)

**Weight distribution (approx.)**  
105/97

**Suspension** Double a-arm geometry with lower a-arm mounted direct acting shocks front / Double a-arm geometry with upper a-arm mounted direct acting shocks rear

**Tyres** 20.5 x 7.0-13 R25B Hoosier front/rear

**Wheels** 7 inch wide, 13 inch diameter, 6.5 inch backspacing two piece alloy front/rear

**Brakes** AP Racing CP2623

**Chassis** Steel space frame

**Electric Motor** Emrax 208

**Accumulator Spec** Sony Murata VTC6 US18650 Li-on cells

**Max power/max torque**  
68 kW at 6000rpm / 140 Nm for Xsec

**Transmission** Direct chain drive (520 Chain), 13-tooth front sprocket, 45-tooth rear sprocket

**Differential** Quaife Helical limited-slip differential

**Final drive** 3.46


**TEAM BATH RACING ELECTRIC**

Team Bath Racing Electric (TBRE) was founded in 2015. We are an exciting and innovative student motorsport team based at the University of Bath. Our team of undergraduates from across the university design, build and race a formula-style car for the Formula Student competition against teams from all around the world.

We compete at Silverstone each year for the UK event and travel around the world to compete in international Formula student events. We were the first UK electric team to compete abroad, competing in Zhuhai, China in 2018. In 2019 we competed in Spain which helped maintain our spot as #1 UK Electric Formula Student Team.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
n/a

**Track** n/a

**Car weight (approx.)** n/a (kgs.)

**Weight distribution (approx.)**  
n/a

**Suspension** n/a

**Tyres** n/a

**Wheels** n/a

**Brakes** n/a

**Chassis** n/a

**Electric Motor** n/a

**Accumulator Spec** n/a

**Max power/max torque**  
n/a

**Transmission** n/a

**Differential** n/a

**Final drive** n/a


**FORMULA STUDENT VITORIA**

Founded in 2018, this will be the first competition for the team. Some problems for finishing the control and electronics systems of the car have not allowed us to take part in the dynamic events.

Our aim is to learn as much as possible in competition and get closer to the goal of getting our car running this year. Also, as we will arrive without references from previous years, we would like to achieve a top 15 in the static tests.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2972/1441/1305/1550

**Track** 1250/1250

**Car weight (approx.)** 233 (kgs.)

**Weight distribution (approx.)**  
104/129

**Suspension** Double wishbone independent suspension, push system with rocker and Z type AntiRoll system. front/rear

**Tyres** 205/470 R13, Continental C19 front/rear

**Wheels** 7.0x13, ET 30, OZ Racing front/rear

**Brakes** GS Compact Remote Master Cylinder with a diameter of 0.7 inch with balanced bar front/rear

**Chassis** Composite monocoque

**Electric Motor** AMK / DD5-14-10-POW front/AMK / DD5-14-10-POW rear

**Accumulator Spec** Melasta / Lithium Polymer (Pouch cells) front

**Max power/max torque**  
36 kW at 16000 rpm front/rear

**Transmission** Four wheel drive system with a gearbox inside of the upright and compound planetary gearset

**Differential** n/a

**Final drive** 13.94


**UGRACING CONCEPT TEAM**

UGRacing Concept Team enter FSUK 2022 with high hopes and ambition after record-breaking success in recent years. Placing 4th in the Business Plan Presentation event in 2019, and then a team-best finish of 3rd in Concept design in 2021. Comprised of around 30 members spread across all different year groups and degrees at Glasgow, the concept team is looking to make more of an impact than ever at FSUK 2022. Having competed at Formula Student since 2007,

They have seen a significant rise in success in recent years and aim to improve on that. Succeeding their transition last year from an Internal Combustion Engine to an Electric Powertrain, they look to continue to innovate the technologies introduced in 2021. UGR's Concept Car will see a refined aerodynamic package, custom accumulator and a new type of electric motor. The hard work by the concept team this year will carry on to become the basis for UGR's EV entry in 2023.


**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2878/1321/1200/1525

**Track** 1140/1100

**Car weight (approx.)** 205 (kgs.)

**Weight distribution (approx.)**  
94.3/110.7

**Suspension** Double unequal length a-arm. Pullrod actuated spring/damper front/rear

**Tyres** Hoosier R20, LCO, 16.2" front/rear

**Wheels** OZ 10"x7" Centrelock front/rear

**Brakes** AP Racing CP7855-89PRT, 15mm Bore, Balance Bar front/rear

**Chassis** Hybrid, composite monocoque with rear steel space frame

**Electric Motor** Plettenberg Nova 15 50 B8 P30 front / Plettenberg Nova 30 50 B3 S P50 V2 Rear

**Accumulator Spec** Samsung INR18650-30Q

**Max power/max torque**  
15kW at 8000rpm / 40 Nm for few secs front/ 30kW at 7000rpm / 80 Nm for few secs rear

**Transmission** Direct outboard planetary gear drive (front), Planetary gear and halfshaft drive (rear)

**Differential** n/a

**Final drive** 3.42 (front), 3.67 (rear)

**UH RACING**

UH26, UHRacing's vehicle for the 26th year competing in Formula Student, features an all electric powertrain with 4 in-wheel motors. A 588Vdc, 7.812kWh battery pack provides energy storage with power being transferred to all 4 wheels through a complex control system utilising a Cosworth IPS48 MkII PDU & Lenze-Schmidhauser Inverters. Custom fisher motors provide up to 29.1N.m of torque to each self-designed 9:1 ratio epicyclic gearbox, in turn driving lightweight 7J x 13", OZ Racing magnesium alloy rims. The chassis is a

high strength laser cut tubular spaceframe fitted with carbon fibre and Oratex bodywork. The suspension system on UH26 has been upgraded to include a custom FS spring & damper setup developed with vehicle dynamics specialist Multimatic. The team are able to monitor the car and driver's progress through a live telemetry and coms system developed through Pi Toolbox. UH26 marks UHRacing's second generation after its return to EVs after 12 years away with an advanced 4WD design.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2976/1425/1134/1560

**Track** 1228/1228

**Car weight (approx.)** 210 (kgs.)

**Weight distribution (approx.)**  
98.7/11.3

**Suspension** Double wishbone push rod to damper front/H Frame rear

**Tyres** 20.7x7x13 dry slick Hoosier (Dry) 20x7.5x13 Wet Hoosier (Wet) front/rear

**Wheels** 7J x 13", OZ Racing magnesium alloy rims front/rear

**Brakes** AP Racing CP7855, Ø17.8mm bore front/AP Racing CP7855, Ø19.05mm bore rear

**Chassis** Tubular steel space frame

**Electric Motor** Fischer Elektromotoren/TI085/In-wheel front/rear

**Accumulator Spec** Sony us18650VTC6

**Max power/max torque**

35.4 front, 35.4 rear/29.1 for TBC seconds (Testing required)

**Transmission** 4x Compound epicyclic gearboxes housed inside each upright

**Differential** n/a

**Final drive** 8.5

**HULL ELECTRIC RACING TEAM**

Hull Electric Racing Team (formerly known as HUEFS) will produce an electric vehicle for the first time. The team took the decision to carry out this conversion over two years, taking the 2021/22 season to design the vehicle and 2022/23 for building and testing, with the hopes of having a well-designed and reliable electric vehicle for the 2023 FSUK competition. This decision was made to give the team more time and ensure it had the money and provisions required for this transition.

For the purposes of effective knowledge transfer to newer members, the team management put a strong emphasis on good engineering design practices. Reliability of the car is the team's first and most important focus, as well as minimising the overall vehicle mass. Performance improvements can only be started once reliability is achieved. This new era also gives the team an opportunity to identify and fix mistakes made during the design of the previous vehicles.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2465/675/1222/1539

**Track** 1220/1100

**Car weight (approx.)** 250 (kgs.)

**Weight distribution (approx.)**  
120/130

**Suspension** Double unequal length A - Arm. Push rod actuated. front/rear

**Tyres** 7.2/20.0 - 13 A92 Avon front/rear

**Wheels** 7.0 inch width, ProRace 1.2 Billet Aluminium machined rims front/rear

**Brakes** Tilton 78 Series, Stroke 25.9 mm, Spring proportioning front/rear

**Chassis** Tubular space frame

**Electric Motor** EMRAX 228 Axial Flux

**Accumulator Spec** Samsung INR - 18650 25R

**Max power/max torque**

109 kW at 6500 RPM, 230Nm for a few seconds

**Transmission** Chain, 520

**Differential** Drexler Limited Slip Differential, 120 mm bearing spacing

**Final drive** 3

**E-TEAM HARE**

Team HARE is one of the oldest teams currently taking part in Formula Student. Joining the grid from the year 1999, the team has gone through multiple changes throughout the years and 2022 marks a another milestone for the team. The introduction of E-Team HARE has propelled the team into the future of motorsports with the new EV propulsion system.

Several other technologies were introduced by the team to keep to ensure that the team continues to stay competitive.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2886/1434/1162/1550

**Track** 1240/1254

**Car weight (approx.)** 164 (kgs.)

**Weight distribution (approx.)**  
53/112

**Suspension** Pushrod Suspension with Ohlins TTX25 Dampers front/rear

**Tyres** 16.2 x 7.2 - 11.5 R25B Hoosier front/16.2 x 7.2 - 11.5 R25B Hoosier rear

**Wheels** 190 mm, Cast Magnesium front/190 mm, Cast Magnesium rear

**Brakes** AP Racing CP7855-905PRITE (16.8mm Bore Size) front/AP Racing CP7855-905PRITE (19.1mm Bore Size) rear

**Chassis** Carbon Fibre spaceframe, titanium and aluminium nodes, steel roll hoops with nodes

**Electric Motor** AMK / DD5-14-10-POW front/rear

**Accumulator Spec** Panasonic front/rear

**Max power/max torque**

26 kW at X RPM / 21 Nm for 1.24 s

**Transmission** Planetary Gearbox

**Differential** n/a

**Final drive** 6:1

**LEEDS GRYPHON RACING**

Leeds Gryphon Racing has enjoyed a long career since the team was established in 1996. This year, Leeds Gryphon Racing's first ever electric vehicle has been entered for competition. The main aim for the team was to produce a reliably working vehicle that is able to pass scrutineering at competition, from which they can build and optimise in future years.

Since a brand-new powertrain required purchasing, cost-cutting was a strong focus alongside the reliability of every part. One of the main team priorities is inclusivity and collaboration across departments. LGR has opened up to include more students with an electrical background and have a more transdisciplinary team. LGR appreciate the guidance provided by the faculty advisor Kris Kubiak, technicians Alan Brickwood and Peter Grieve, as well as visiting lecturer Isobel Pollock.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
3000/1380/1160/1633.81

**Track** 1200/1150

**Car weight (approx.)** 230 (kgs.)

**Weight distribution (approx.)**  
103.5/126.5

**Suspension** Double wishbone, Push rod front/rear

**Tyres** 16x6-10 LCO Hoosier front/rear

**Wheels** 6" width 10" diameter, 13mm offset, 2 piece split rim front/rear

**Brakes** AP Racing CP7854, 14mm bore front/rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 228 MV Liquid Cooled

**Accumulator Spec** Sony Murata VTC5a

**Max power/max torque**

109kW@5500rpm/230Nm for 4 seconds

**Transmission** Fixed, single ratio, chain driven transmission

**Differential** Drexler clutch type limited slip torque lock up Acl. 60%, Decl. 42%

**Final drive** 4.25



**ULM RACING**

The University of Liverpool Motorsport Concept Class Team is comprised of MEng Mechanical Engineering students in their penultimate year of study and volunteers from other departments across the university. The team has competed at the three previous Formula Student Concept Class competitions, FSUK18, FSUK19 and FSUK21, placing sixth overall in the first two and third overall in the most recent. FSUK22 continues to use the EV powertrain which was first introduced in FSUK21 to help champion sustainability and help to drive motorsport

technology forward. The car features an all-wheel-drive powertrain that consists of AMK DD5-14 electric motors with highly integrated hub architecture and planetary gearing, supplied by an 8kWh accumulator. The car operates with a direct suspension system, and the chassis is full carbon fibre monocoque. This will be complemented by a full aero package and the distinctive Liverpool nose and livery. The team wish to extend their gratitude to all sponsors involved this season.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2879/1401/1391/1550

**Track** 1185/1144

**Car weight (approx.)** 210 (kgs.)

**Weight distribution (approx.)**  
96.6/113.4

**Suspension** Direct Suspension, unequal and unparallel wishbone arms and modified ohlins shocks front/rear

**Tyres** 205/470 R13 C16 Continental front/rear

**Wheels** 13"x7" one piece magnesium front/rear

**Brakes** AP Racing CP7855-905PRTE, 16.8mm bore front/rear

**Chassis** Composite monocoque

**Electric Motor** AMK DD5-14 10-POW front/rear

**Accumulator Spec** Molicel P28A front/rear

**Max power/max torque**  
n/a

**Transmission** AWD in-hub with 2-stage planetary gearset

**Differential** n/a

**Final drive** 12

**UPRACING ELECTRIC**

UPRacing Electric from the University of Portsmouth, is entering the concept class competition this year targeting their core focus to design a vehicle that is able to pass scrutineering and technical inspection for the 2023 season,

The team is hoping to withhold another year of strong static events while building Portsmouth's first EV through the 2022 summer to give appropriate time for testing and manufacture. UPRacing Electric would like to thank the University of Portsmouth for their ongoing support and cooperation.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2600/1413/1160/1600

**Track** 1229.5/1229.5

**Car weight (approx.)** 238.8 (kgs.)

**Weight distribution (approx.)**  
132.29/178.474

**Suspension** Unequal length converging double wish bone front/rear

**Tyres** 7.0/16.0-10, A92, Avon front/rear

**Wheels** OZ Formula Student Magnesium CL 10" (7", cast Mg), 22mm offset front/rear

**Brakes** AP Racing CP 2623 with 16.8 mm diameter bore front/rear

**Chassis** Steel tubular space frame

**Electric Motor** Emrax 228 Axial Flux

**Accumulator Spec** Sony Murata

VTC6 18650

**Max power/max torque**

109 kW at 5500rpm / 230 Nm for a few seconds

**Transmission** 428 Chain and Sprocket Drive

**Differential** Drexler Limited Slip Differential with adjustable ramp angle

**Final drive** 3.79



UNIVERSITY OF PORTO  
PORTUGAL

320

### FS FEUP

FS FEUP from the University of Porto was established in 2021 and is motivated to participate in the Formula Student competition as Concept Class team for the first time, hoping to ensure the first chapter of a long and strong future. The team will introduce an electric car design focused on production practicality, average cost and medium performance in order to enable them to reach their goal of building the prototype by 2023. The prototype will present one motor rear wheel drive, simple aerodynamic and a steel frame chassis. The team hopes to

achieve a good performance in the Static Events in order to boost the further development, manufacturing and testing. The new team is focusing on ensuring the longevity and continuity of the project by investing in a well-structured organisation, good documentation of all work and decisions while searching for long-term partnerships with companies and organisations. The team would like to demonstrate a special appreciation for the Faculty Advisor, Luís Galamba Carvalho, for the continued support and advisory.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2920/1440/1305/1600

**Track** 1200/1200

**Car weight (approx.)** 270 (kgs.)

**Weight distribution (approx.)**  
121.5/148.5

**Suspension** Short Long Arm - pushrod suspension type front/rear

**Tyres** 7,2 x 20 A92 compound - ultra soft front/rear

**Wheels** Magnesium Center Lock Wheel 7 x 13 front/rear

**Brakes** Tilton 78 series

**Chassis** Steel space frame

**Electric Motor** Emrax 228

**Accumulator Spec** Melasta - SLPB9975175

**Max power/max torque**  
n/a

**Transmission** Roller Chain

**Differential** Drexler Adjustable Multi-Disc Limited Slip Differential Formula Student

**Final drive** 4to1



UNIVERSITY OF SAINT ANDREWS  
UK

413

### SAINTS PERFORMANCE AUTOMOTIVE DESIGN

Saints Performance Automotive Design (SPAD) is the University of St Andrews' first Formula Student team and one of the newest teams to join and compete in the competition. In 2020, a group of St Andrews' students found that their experiences lacked opportunities to apply their technical knowledge in a practical manner. Brought together by their passion for engineering and motorsport, students founded SPAD with the aim of cementing a strong program for students to explore their interests and gain real-world

experience in engineering and manufacturing, business planning, and project management. Within two years, SPAD has nearly doubled in size and support for the team continues to grow. Today, SPAD represents a diverse group of students from over 25 countries, studying a variety of subjects from physics, mathematics, and computer science to economics, geography, and philosophy.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2602/846/1140/1792

**Track** 1250/1200

**Car weight (approx.)** 300 (kgs.)

**Weight distribution (approx.)**  
120/180

**Suspension** Double wishbone front/rear

**Tyres** 10" - A92 Avon front/13" - A92 Avon rear

**Wheels** 7 x 16 front/7.2x20.0 rear

**Brakes** Wilwood TM1 front/Wilwood TM2 rear

**Chassis** Tubular Space Frame

**Electric Motor** Emrax 228 MV

**Accumulator Spec** Samsung INR18650-25R

**Max power/max torque**

78.5kW at 3250RPM / 230 Nm for a few seconds

**Transmission** Chain

**Differential** Spool Differential

**Final drive** 2

**WARWICK RACING**

Warwick Racing, the University of Warwick's Formula Student Team, are a cross-disciplinary team of tenacious engineers fixed on one goal: producing a performance electric racing vehicle. The team are aiming for competitive performance in the dynamics events with the next generation EV, WRe2, continuing the successes experienced with WRe1. WRe2 features all new custom accumulator packs made in-house - a rarity amongst FS teams.

Having spent much development time on motor control and facilitating torque vectoring, the batteries are expected to deliver formidable performance across all dynamic events. Leveraging the team's experience with topology optimisation, components such as bulkheads, uprights, and brackets have been optimised to the lightest practical mass. Warwick Racing would like to thank all those involved with the project for their ongoing support.

**TECHNICAL SPECIFICATION****Length/height/width/wheelbase**

2680/1610/1180/1700

**Track** 1400/1360**Car weight (approx.)** 370 (kgs.)**Weight distribution (approx.)** 170/210**Suspension** Double unequal length A-Arm. Push Rod front/5 Element Multilink Push Rod rear**Tyres** 7.2/20.0-13 Avon A92 front/rear**Wheels** Team Dynamics 1.2 Pro, Cast Alloy front/rear**Brakes** 15.9mm Bore front/rear**Chassis** Aluminium Panelled space frame**Electric Motor** 2x Emrax 208**Accumulator Spec** A123 Pouch cells**Max power/max torque**

68kW per Motor / 140 Nm per motor

**Transmission** 2 x Renthal 520 Chain**Differential** n/a**Final drive** 3.43



**TEAM BATH RACING ELECTRIC**

Team Bath Racing Electric AI (TBReAI) is the University of Bath's driverless Formula Student team. Having enjoyed a successful first entry in 2019, substantial team growth in 2020, and winning the overall DDT class in 2021, TBReAI are well positioned for an impressive ADS-DV entry in 2022. By working closely with sister team TBRe, the driverless team have developed an extension to the TBRe21 vehicle to enable its entry to the ADS-DV class. The design includes bespoke actuators, used in conjunction with stereo cameras, 3D LiDAR, and many more vehicle sensors to provide reliable driverless performance.

TBReAI's objectives this year have been to build on previous developments to produce a reliable autonomous system. These developments are enabled by larger and more structured mechanical, electrical, software, and simulation design teams. The mechanical and electrical designs are made to function as reliably as possible to enable rapid prototyping and testing of the autonomous pipeline and its components in a real environment as well as in simulation.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2835/1360/1059/1535

**Track** 1200/1200

**Car weight (approx.)** 211 (kgs.)

**Weight distribution (approx.)**  
84.55/126.52

**Suspension** Double wishbone, pushrod, out of plane front/Double wishbone, pushrod, in-plane rear

**Tyres** Hoosier 16.0 x 7.5-10 LCO front/Hoosier 18.0 x 6-10 LCO rear

**Wheels** OZ centre lock 10" spin cast magnesium, 22mm offset front/rear

**Brakes** Tilton 78-812, 13/16" bore, balance bar front/rear

**Chassis** Hybrid front carbon fibre monocoque, rear steel space frame

**Electric Motor** EMRAX 228 MV CC

**Accumulator Spec** Sony US18650VTC6

**Max power/max torque**  
100kW@6500rpm/240Nm for a few secs

**Transmission** Chain

**Differential** n/a

**Final drive** 3

**EDINBURGH UNIVERSITY FORMULA STUDENT**

SISU 21D is the first electric and the first autonomous car developed by the Edinburgh University Formula Student team for the 2021 and 2022 ADS Class entry. It is based on the 2019 IC Class 1 platform (SISU IV) using its original suspension system, wheels, some of its drivetrain components and slightly

modified spaceframe chassis. The main changes include the electric powertrain and the autonomous actuator implementation. The overall design goals are to create a simple, controllable and integratable platform to apply the full autonomous software stack and win the ADS class in FSUK.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2781/1580/1260/1584

**Track** 1403/1407

**Car weight (approx.)** 260.2 (kgs.)

**Weight distribution (approx.)**  
99.2/161

**Suspension** Unequal A-arms with Pushrod front/rear

**Tyres** 20.5x7.0x13, R25B, Hoosier front/rear

**Wheels** 7.7 in front/rear

**Brakes** AP Racing CP7855 front/AP Racing CP785 rear

**Chassis** Steel space frame

**Electric Motor** EMRAX 208 Liquid Cooled Medium Voltage

**Accumulator Spec** Samsung 18650 - INR18650-25R

**Max power/max torque**  
68kW@6000rpm/140Nm for a 120 secs

**Transmission** Chain 520

**Differential** Drexler Formula Student V1 Limited Slip Differential

**Final drive** 4







AIN SHAMS UNIVERSITY  
EGYPT

n/a

#### ASU RACING TEAM

We are a student organization managed mostly by engineering students and supervised by our professors at the faculty of engineering Ain-Shams university. Our main vision is to keep up with the immensely accelerated innovation in automotive technology worldwide by researching, learning and applying this knowledge to revive the automotive industry in Egypt.

We have begun competing in the FS-AI competition in 2020 and for the first time in our history we were able to get second place overall securing a top 3 finish in all events of the competition.



#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON 7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**



COVENTRY UNIVERSITY  
UNITED KINGDOM

n/a

#### AI COVENTRY UNIVERSITY

Phoenix Racing is Coventry University's entrant to the IMechE Formula Student competition.



#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON 7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**



CAIRO UNIVERSITY  
EGYPT

n/a

#### CAIRO UNIVERSITY RACING TEAM-AI

Cairo University Racing Team (CURT) is an Egyptian team and the pioneer of Formula Student competitions not only in Egypt but also in the MENA region.

We started our journey by building our first formula-style car to participate successfully in the UK in 2012 and later on we travelled among Europe achieving worldwide rankings in Germany and Italy as well.



#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**

2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON  
7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**



IMPERIAL COLLEGE LONDON  
UNITED KINGDOM

n/a

#### IMPERIAL DRIVERLESS

Imperial Driverless is the FS-AI team at Imperial College London.



#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**

2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON  
7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**



## PAKISTAN NAVY ENGINEERING COLLEGE PAKISTAN

n/a

### FORMULA ELECTRIC RACING NUST

Formula Electric Racing-NUST, a project by NUST-PNEC, is the first team from Pakistan to design and manufacture a Formula Electric vehicle and now compete in the FS-AI competition

### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**

2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON

7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**



## THE UNIVERSITY OF EDINBURGH UNITED KINGDOM

n/a

### EDINBURGH UNIVERSITY FORMULA STUDENT AI-DDT

With the rise of autonomous cars in recent years, our team responded in the only way we know – with curiosity, enthusiasm, and dedication. Thus we founded the AI team which seeks to give students an opportunity to get into the exciting field of driverless cars, apply their classroom knowledge to a real project, obtain experience in collaborating in a group, and of course race the car at Formula Student events around the globe! In October

2017, EUFS expanded with a brand new project, the Artificial Intelligence (AI) team. We aim to retrofit one of the previous EUFS FS-Team cars into a fully electric self-driving race car and participate in international student competitions as part of Formula Student Driverless. As an intermediate step to that goal, we participated in the IMechE's FS-AI competition where we created the software for a self-driving car and applied it to a vehicle provided by the competition organisers.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**

2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

**Suspension**

**Tyres** SAE Formul Student AVON

7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

**Transmission**

**Differential** Open Differentials

**Final drive**





OXFORD BROOKES UNIVERSITY  
UNITED KINGDOM

n/a

### OXFORD BROOKES RACING AUTONOMOUS

OBR Autonomous was formed in 2018 with the aim to develop highly precise self-driving systems for our Formula Student race cars. At OBR Autonomous we believe in chasing excellence & our team members possess that spark of determination, motivation & enthusiasm which makes us one of the UK's best student autonomous motorsport teams. OBR Autonomous is comprised of highly enthusiastic students mainly from computing and engineering fields who are focused on achieving success in every coming racing season.

Currently, the team operates from the University work space based at Wheatley Campus in Oxford. The team consists of various sub-teams focused on accomplishing specified intensive targets in the fields of Vehicle Development, Perception, Localisation, Vehicle Integration, Simulation & Motion Control. We also have designated Research as well as Business Development teams. There is also a strong social element within the team, with fun team bonding activities an important part of our team-building process.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

#### Suspension

**Tyres** SAE Formul Student AVON 7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

#### Transmission

**Differential** Open Differentials

**Final drive**



TRINITY COLLEGE DUBLIN  
IRELAND

n/a

### FORMULA TRINITY

Autonomous technology is becoming more and more relevant around the world with the rise of self-driving vehicles. The challenges facing this technology has transitioned to students through the introduction of Autonomous divisions in Formula Student competitions around the world. Formula Student UK 2018 saw the establishment of a new Autonomous category, and in 2019 this expanded to include more teams and to give options. Formula Trinity Autonomous was initially established in late 2018 so the team can get an early start by beginning the research, financing and experimentation. The project was rejuvenated under a new focus and direction in 2020 by three veteran members Andrew Dai, Jakub Pyszk and Senan Stanley.

Aligned with Formula Trinity's core principals, Autonomous aim to provide a learning framework where members can gain critical skills in algorithms, machine learning, sensors, management and leadership. The team aim to achieve this by establishing an 'Autonomous Racing' culture within the team and University, where members can participate in competitions outside of Formula Student. The team strive to compete in competitions such as F1Tenth, with the end goal to successfully compete in the FS-AI category at Silverstone.



### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

#### Suspension

**Tyres** SAE Formul Student AVON 7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

#### Transmission

**Differential** Open Differentials

**Final drive**





UNIVERSITY OF GLASGOW  
UNITED KINGDOM

n/a 

#### UGRACING

UGRacing is the University of Glasgow's Formula Student Team. Designing, building and racing a single seat racing car against over one hundred universities from around the world is no small feat, but doing this from scratch every single year...that's Formula Student.

We are a team of over one hundred students studying at the University of Glasgow, in degrees ranging from Engineering, Physics and Computer Science through to Law, Digital Media and Business.



#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

#### Suspension

**Tyres** SAE Formul Student AVON  
7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

#### Transmission

**Differential** Open Differentials

**Final drive**



TEESSIDE UNIVERSITY  
UNITED KINGDOM

n/a 

#### TEESSIDE FALCONS

Teesside Falcons is the FS-AI team at University of Teesside.

#### TECHNICAL SPECIFICATION

**Length/height/width/wheelbase**  
2814.6/1430/624/1530

**Track** 1201/1201

**Car weight (approx.)** (kgs.)

**Weight distribution (approx.)**

#### Suspension

**Tyres** SAE Formul Student AVON  
7.2/20.0-13

**Wheels** 4WD

**Brakes**

**Chassis** Custom built

**Electric Motor**

**Accumulator Spec**

**Max power/max torque**

#### Transmission

**Differential** Open Differentials

**Final drive**



UNIVERSITY OF MANCHESTER  
UNITED KINGDOM

n/a

#### MANCHESTER STINGER MOTORSPORTS FS-AI

Manchester Stinger Motorsports FS-AI are an FS-AI team based in the University of Manchester. Our objectives are to build a fully autonomous racing car, compete in the upcoming Formula Student competition, develop a simulation environment for testing and create a future proof system.



#### TECHNICAL SPECIFICATION

##### Length/height/width/wheelbase

2814.6/1430/624/1530

##### Track

1201/1201

##### Car weight (approx.) (kgs.)

##### Weight distribution (approx.)

##### Suspension

Tyres SAE Formul Student AVON  
7.2/20.0-13

##### Wheels

4WD

##### Brakes

Chassis Custom built

##### Electric Motor

##### Accumulator Spec

##### Max power/max torque

##### Transmission

Differential Open Differentials

##### Final drive

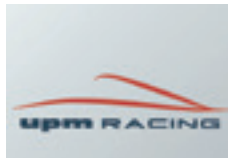


UPM TECHNICAL UNIVERSITY OF MADRID  
SPAIN

n/a

#### UPMRACING

UPMRACING is the FS-AI team at UPM Technical University of Madrid.



#### TECHNICAL SPECIFICATION

##### Length/height/width/wheelbase

2814.6/1430/624/1530

##### Track

1201/1201

##### Car weight (approx.) (kgs.)

##### Weight distribution (approx.)

##### Suspension

Tyres SAE Formul Student AVON  
7.2/20.0-13

##### Wheels

4WD

##### Brakes

Chassis Custom built

##### Electric Motor

##### Accumulator Spec

##### Max power/max torque

##### Transmission

Differential Open Differentials

##### Final drive

**MMR DRIVERLESS**

Team MMR Driverless from the University of Modena and Reggio Emilia will be aiming for a good performance at this year's Formula Student competition. Established in 2018, this is the first year that the team will participate physically in a competition. Since 2018, focus has been on designed a vehicle that can

guarantee safety and reliability in dual mode: Autonomous and Manual. The team would like to thank their sponsors and in particular Bosch and Fondazione di Modena as well as the University of Modena and Reggio Emilia for their continued support of the Formula Student programme.

**TECHNICAL SPECIFICATION**

**Length/height/width/wheelbase**  
2989,257/1377,6/952,582/1511,352

**Track** 1179/1144

**Car weight (approx.)**  
275 (kgs.)

**Weight distribution (approx.)**  
115.9/159.1

**Suspension** Double unequal A-Arms with pull-rod front/rear

**Tyres** 18"x6"-10" R25B Hoosier front/rear

**Wheels** 10"x7.25" front/rear

**Brakes** Tilton Series 76 15.88mm front/rear

**Chassis** Monocoque

**Engine** Suzuki GSX-R 600

**Bore/stroke/cylinders/cc**  
67/42.5/4/599

**Fuel system** Indirect Fuel Injection

**Max power/max torque**  
62.5kW@10500rpm/  
57Nm@9000rpm

**Transmission** Bevel Gear

**Differential** n/a

**Final drive** 3.38





## Autodesk

Autodesk is changing how the world is designed and made. Our technology spans architecture, engineering, construction, product design, manufacturing, media, and entertainment, empowering innovators everywhere to solve challenges big and small. From greener buildings to smarter products to mesmerizing blockbusters, Autodesk software empowers innovators to design and make a better world for all.

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## Babcock

Babcock is an international aerospace, defence and security company. We have a leading naval business, and provide value-add services across the UK, France, Canada, Australasia and South Africa. We also operate in, and export to, additional markets.

Our strategy is to focus on our core activities in the UK, using our capabilities to work on exports from the UK and to develop our international presence in our target countries. We operate in attractive markets and are positioning ourselves for future growth.

<https://www.babcockinternational.com/>



### Bentley Motors Ltd

Bentley Motors is the most sought-after luxury car brand in the world. The company's headquarters in Crewe is home to all of its operations including design, R&D, engineering, Mulliner and production of the company's five model lines; Continental GT, Continental GT Convertible, Flying Spur, Bentayga, and Bentayga EWB. The combination of fine craftsmanship, using skills that have been handed down through generations, alongside engineering expertise and cutting-edge technology is unique to UK luxury car brands such as Bentley. It is also an example of high-value British manufacturing at its best. Bentley employs around 3,000 people at Crewe.

Bentley is on an extraordinary journey into the future – a future in which sustainability will be paramount. Bentley has made significant leaps forward, from concept cars featuring electric powertrains to subsequent launches of hybrid vehicles. Two Bentley models are already available with hybrid powertrains: the Flying Spur Hybrid and Bentayga Hybrid.

Bentley has committed to building a new 'Dream Factory' in Crewe which will transform the company's operations. It will facilitate a fundamental reinvention of the Crewe manufacturing infrastructure, with the aspiration of becoming the future benchmark of luxury car manufacturing, incorporating unique customer and employee experiences – an investment which will be pivotal in Bentley's journey towards being end-to-end carbon neutral by 2030.



### IPG Automotive

As a global leader in virtual test driving technology, IPG Automotive develops innovative simulation solutions for vehicle development. Designed for seamless use, the software and hardware products can be applied throughout the entire development process, from proof of concept to validation and release. The company's virtual prototyping technology facilitates the automotive systems engineering approach, allowing users to develop and test new systems in a virtual whole vehicle. IPG Automotive is an expert in the field of virtual development methods for the application areas of Autonomous Vehicles, ADAS, Powertrain and Vehicle Dynamics. The company's CarMaker product family is used in OEMs, Tier 1s and universities around the world to address the challenges associated with developing and testing autonomous vehicles and training AI algorithms. To this end, highly accurate vehicle models with detailed sensor models are integrated in a realistic environment and autonomous driving functions are validated in countless scenarios. The scalability of the simulation enables the execution and evaluation of millions of virtual tests overnight. As a proud Partner of the Formula Student Championship, IPG Automotive wishes every team the best of luck in all the competitions! Find us at our exhibition stand in the paddock. Our CarMaker support team is ready and happy to answer all your questions. Take the opportunity to find out how IPG Automotive is pioneering simulation technology to increase the efficiency of development processes.

<https://ipg-automotive.com/en/company/research-teaching/>





## AB Dynamics

AB Dynamics' range of automotive testing, verification and validation solutions encompass dynamics, suspension and steering characterisation, durability, advanced driver assistance systems and autonomy. Our customers benefit from proven hardware and software, 40 years of knowledge and experience, plus unrivalled service and support.

We pride ourselves on delivering solutions that enable the development of safer, more enjoyable, efficient, and eco-friendly vehicles. As a key partner to the global

automotive industry, our customers include the top 25 vehicle manufacturers, Tier 1 suppliers, test facilities and autonomous vehicle developers.

As part of the AB Dynamics Group of companies, we offer a wide range of vehicle autonomy, simulation, and testing solutions. As a group, we enable customers to develop and test vehicles in laboratory and virtual environments, validate on the track before finally evaluating vehicles in the real world on public roads.

[www.abdynamics.com](http://www.abdynamics.com)



## MAHLE Powertrain

MAHLE Powertrain provides engineering & consultancy services for the design, testing, development, calibration and integration of electrified powertrain systems and hybridised internal combustion engines.

As a partner to vehicle manufacturers, MAHLE Powertrain is a recognised expert in leading-edge research, development and application of advanced drivelines, control systems and software into high performance, production feasible solutions for future powertrains.

MAHLE Powertrain is the Engineering Services subsidiary of the MAHLE Group, operating independently of the parent company in the selection of the most appropriate technologies or components across automotive and other related sectors. The company was formed following the acquisition of Cosworth Technology from Audi AG in 2005.

MAHLE Powertrain has six technical centres strategically located in the UK, Germany, USA and China, supporting our customers locally across all regions.

The MAHLE Group is well-known as a leading international development partner in the areas of powertrain technology, thermal management and e-mobility.

[www.mahle-powertrain.com](http://www.mahle-powertrain.com)



## RS Grass Roots

RS Components are the world's leading service distributors of electronics and maintenance products. For over 80 years, we have been providing products and solutions to engineers, making it easy for our customers to do business and saving them time and money. We aim to offer our customers unrivalled choice of product technologies, solve problems with innovative solutions and deliver a world-class customer experience.

RS Grass Roots is the Education & Community Impact team at RS Components. Grass Roots champions young engineers with exciting opportunities to nurture the next generation of outstanding innovators! Industry now demands graduate engineers with not only the knowledge but crucially the skills and practical experience to solve real problems and create new designs. Whether you are an academic working to enhance the educational experience or a student tackling your latest project - RS is here to help.

RS Components offers the products, resources and opportunities to enhance the education of tomorrows engineers. Our opportunities are for students and young people all around the world, aiming to bridge the skills gap between university & the workplace.

<https://www.rs-online.com/designspark/grass-roots-education>



## Saietta

Saietta Group is an established engineering company based in Oxfordshire, England. It specialises in propulsion motors for a broad range of electric vehicles (EVs) and has engineered break-through, patent-protected, axial-flux motor tech. It is branded AFT (Axial Flux Technology) and is modular in design, meaning high and low voltage e-motor solutions can be provided from scooters to buses.

Saietta provides end-to-end turnkey engineering services to OEMs from market research and product definition, CAE & simulation, e-motor electrical & mechanical integration, prototype build and vehicle testing on 20 miles of private test tracks, low volume production and production process definition.

AFT140 is the first motor variant and is in low volume production. It is optimised for mid-power motorbikes and final-mile delivery vehicles. The unique AFT140 design provides class-leading performance with high torque density at low voltage and is particularly efficient on urban duty cycles. AFT140 has been designed for high automation in volume production, meaning AFT140 cost effectively delivers class-leading performance for lightweight electric vehicles.

[www.saiettagroup.com](http://www.saiettagroup.com)



## The Faraday Institution

The Faraday Institution is powering one of the most exciting scientific and technological developments of the 21st century—Britain's battery revolution. As the world competes to define the future of energy and automation, the Faraday Institution is accelerating commercially relevant research needed for future battery development to power the transport and energy revolution for the UK.

As the UK's flagship organisation for electrochemical energy storage research, skills development, market analysis and early-stage commercialisation, the Faraday Institution brings together research scientists and industry partners to work on large projects with commercial potential that will reduce battery cost, weight, and volume; improve performance and reliability; and develop whole-life strategies including recycling and reuse.

Aware that next-generation energy storage technologies will come from future scientists and engineers, the Faraday Institution is committed to developing a dynamic and diverse pool of talent. The organisation actively inspires and attracts young people, particularly those from groups historically underrepresented in STEM, to consider careers in the field. It is building the talent pool at a number of levels, providing quality internships for undergraduates and a bespoke PhD programme that leads to future careers in academia, industry or policy making for the benefit of the UK.



## McKinsey & Company

McKinsey & Company is a global management consulting firm. We are the trusted advisor to the world's leading businesses, governments, and institutions. We work with leading organizations across the private, public and social sectors. Our scale, scope, and knowledge allow us to address problems that no one else can. We have deep functional and industry expertise as well as breadth of geographical reach. We are passionate about taking on immense challenges that matter to our clients and, often, to the world.

The Operations Practice is one of the most successful and fastest growing functional practices at McKinsey and accounts for roughly 30% of our work globally. We assist our clients in solving complex operational problems from executive strategy to frontline implementation.



## GKN Automotive

GKN Automotive's market-leading Driveline division demonstrates strength in depth, with an extensive portfolio of products that combine value with technical expertise. The technologies span high-volume low-cost vehicles to top end premium cars with complex all-wheel drive driving dynamics. These world-class products are being constantly refined and improved for global customers.

The ePowertrain division now offers solutions for all electrified vehicles and is a go-to technology partner, creating the ultimate electrified driving experience. Its ability to fully integrate eDrive systems derives from its all-wheel drive legacy and leadership. The first eDrive system being fitted to a production car over 20 years ago and is now powering over 1.5 million electrified vehicles worldwide.

[www.gknautomotive.com](http://www.gknautomotive.com)



## Siemens

We are a technology company focused on industry, infrastructure, transport, and healthcare. From more resource-efficient factories, resilient supply chains, and smarter buildings and grids, to cleaner and more comfortable transportation as well as advanced healthcare, we create technology with purpose adding real value for customers. By combining the real and the digital worlds, we empower our customers to transform their industries and markets, helping them to transform the everyday for billions of people.

<https://new.siemens.com/uk>

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## Multimatic

Multimatic is a privately-held, global technology provider to the automotive industry. The company comprises five operating groups: Multimatic Mechanisms, Multimatic Structures & Suspension, Multimatic Engineering, Multimatic Niche Vehicles, and Multimatic Special Vehicle Operations.

Multimatic's core competencies include the engineering and manufacturing of complex mechanisms, body hardware, suspension systems and body structures, as well as the design and development of lightweight composite automotive systems. In addition, Multimatic delivers niche vehicle design, development and production for road and race applications.

Headquartered in Toronto, Canada, Multimatic has manufacturing divisions and engineering facilities in North America, Europe and Asia, and alliance relationships with partners around the world.

Multimatic has been involved with Formula SAE and Formula Student for over 25 years, with full appreciation of the personal and technical skills that these programmes develop in participating students. The company has over 50 engineers at its technical centres who were introduced to Multimatic through Formula SAE and Formula Student.

[www.multimatic.com](http://www.multimatic.com)





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We've got an exceptional tradition in motor racing and have been the dominant team in Formula 1 for a number of years, achieving a record-breaking 7 consecutive Drivers Championships, and 8 consecutive Constructors championships. At HPP (High Performance Powertrains) we're responsible for the design and manufacture of Mercedes-Benz Formula 1 racing engines and hybrid power systems for the MERCEDES AMG PETRONAS team. We're also proud suppliers to Aston Martin, Williams and McLaren F1 teams.

### **What do we do?**

We create the entire Formula 1 Power Unit, from concept all the way through to racing, and also undertake advanced, high technology projects to transfer F1 technologies into mainstream automotive and high performance road cars. You may have recently heard about our newest venture in this field, Project One, where we're putting an F1 engine into a roadworthy car – the first of its kind, and a phenomenal engineering challenge.

### **What we're recruiting for...**

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By getting involved in Student Competitions such as Formula Student UK, MathWorks prepares and supports the next generation of scientists and engineers with software, training, and mentoring to tackle the same technical issues as professional engineers. Student teams receive industry-standard tools, with a flexible design environment where they can apply classroom theory to competition problems. Students with competition experience become employees who are productive on the job from day one.

<https://uk.mathworks.com/>



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[www.embeduk.com](http://www.embeduk.com)



## Royal Automotive Club

The Royal Automobile Club is one of the world's foremost private members' clubs, offering first-class facilities across two distinctly different clubhouses, built on the foundation of being the United Kingdom's oldest motoring organisation. The Pall Mall clubhouse, set in the heart of the St James's area of London, provides a welcoming sanctuary from the bustle of the capital city.

[www.royalautomobileclub.co.uk](http://www.royalautomobileclub.co.uk)



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## Formula Student

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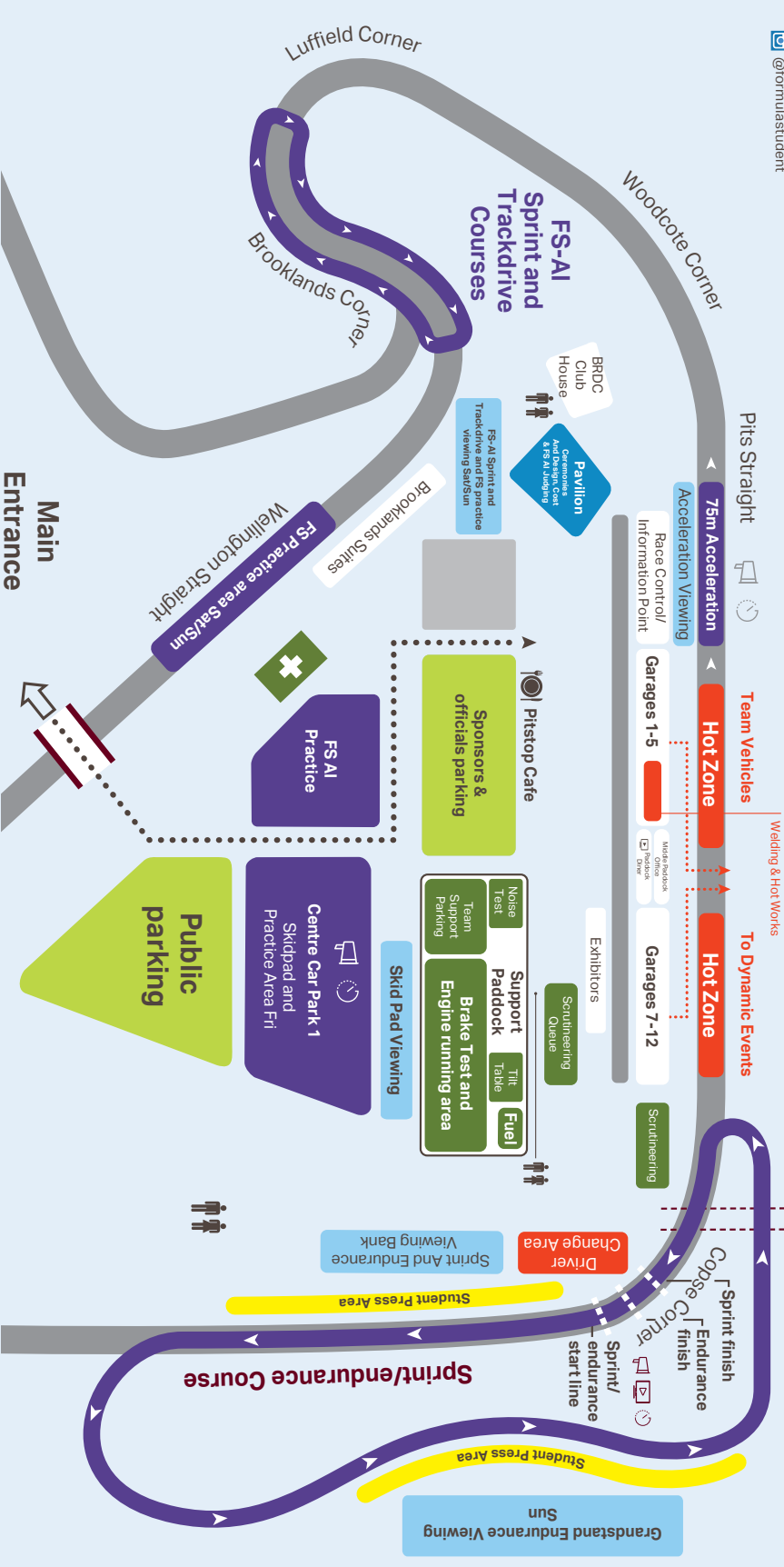
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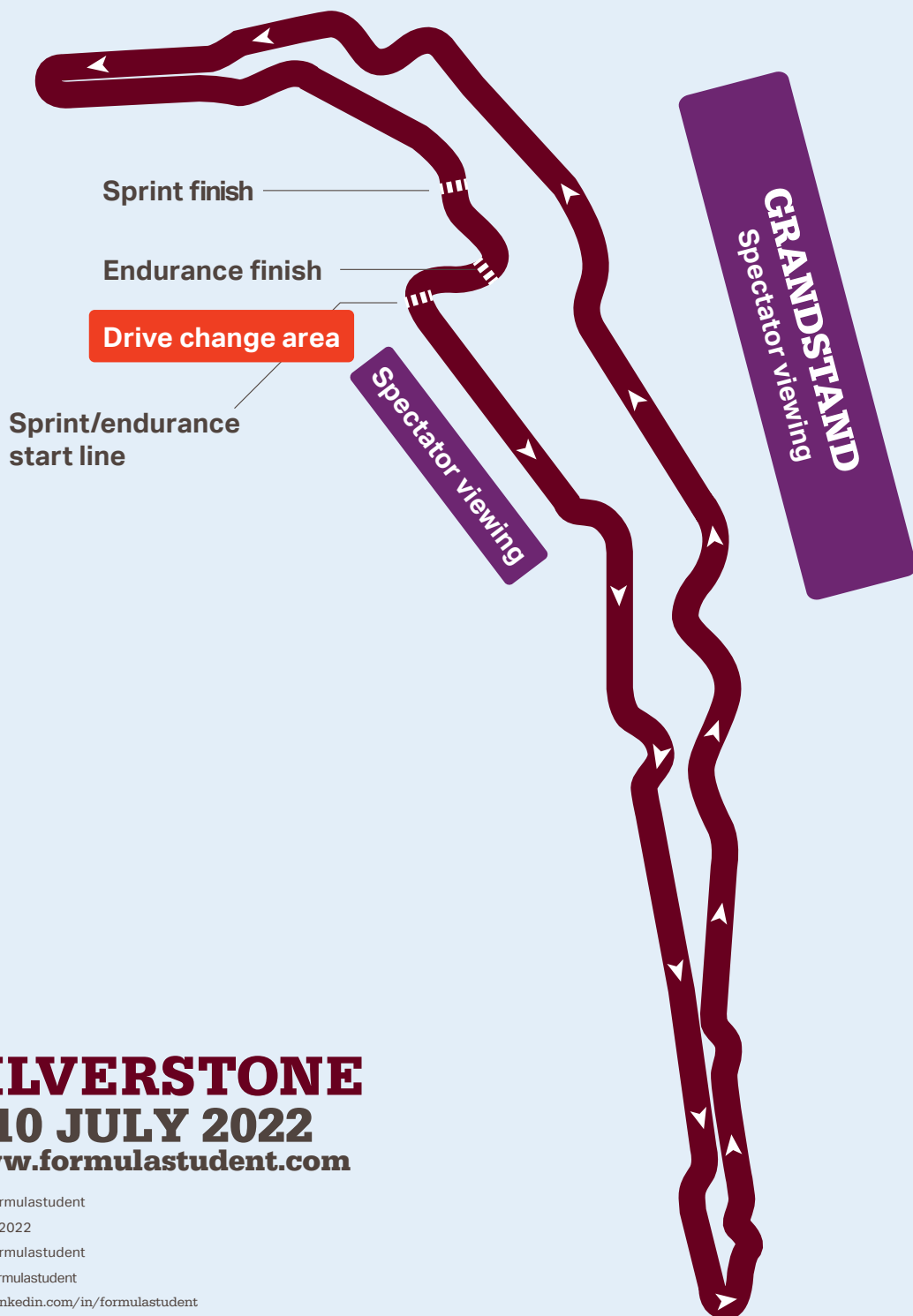









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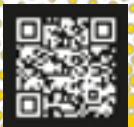
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