Academic year
2025/26 entry

Cranfield University

Postgraduate master's courses in

Motorsport Engineering

Advanced Motorsport Engineering MSc
Advanced Motorsport Mechatronics MSc

Cranfield University

Our reputation

We are the UK's only specialist postgraduate university in technology and management, with longstanding relationships with some of the most prestigious global companies. Our close collaboration with industry, and passion for the areas we operate in, will help your career.

Specialist postgraduate
A research-focused professional community.

We work with over
1,500
businesses and governments based in over **40 countries.**

Over £150m
of investment in new facilities over the past five years.

5,000+
postgraduate students from 100+ countries.

A network of
80,000+
alumni, from 170+ countries.

As we are postgraduate only, we are not listed in many league tables that help compare undergraduate universities.

What our alumni say

"I discovered Cranfield after looking through the current graduates of different Formula 1 teams. I noticed that a lot of them had completed the Advanced Motorsport Engineering MSc here at Cranfield. I reached out to some alumni, who were happy to share their experiences. After that, Cranfield seemed like the obvious choice."

Sam Lowe,
current student, (Advanced Motorsport Engineering MSc)

Reasons to study **motorsport** with us

1

Links with industry

Our courses are developed in collaboration with leading motorsport businesses. Steered and supported by an industrial advisory panel, comprising of senior motorsport professionals, our courses are designed to meet the needs of the international motorsport sector.

2

Motorsport pedigree

Cranfield has undertaken research, consultancy and testing for the motorsport sector since the 1970s. This track record ensures our courses are highly respected by the motorsport industry. The Cranfield Impact Centre is a Fédération Internationale de l'Automobile (FIA) approved test centre, and Axsim Racing is at the forefront of race driving simulation. Our MSc programmes are linked to AVL through their University Partnership Scheme, where students have access to AVL Boost software.

3

Outstanding facilities

You will have access to Cranfield's extensive facilities which motorsport and high-performance engineering companies have used for many years. Our facilities, including the Multi User Environment for Autonomous Vehicle Innovation (MUEAVI), our purpose-built test track for research into connected and autonomous vehicles, Off-Road Engineering System (ORES), four post test rig, damper dynos, bespoke tyre test rigs, Off Road Dynamics Facility (ORDF), wind tunnels and composites laboratory, will all support your learning experience across a wide range of practical sessions.

4

Career prospects

Our courses prepare you for stimulating and rewarding motorsport and high-performance engineering careers. Our students progress onto careers ranging from design roles to working trackside with teams. On successful completion of our courses you will gain rapid career progression within the motorsport industry.

5

Networking opportunities

Cranfield has an enviable network of industry contacts. Many of our alumni come back to provide industrial insight during the lecture programme, and support both the group design projects and individual research projects. In addition, you can join a dedicated Cranfield Motorsport Facebook page and make use of LinkedIn.

6

Motorsport-related project work

Group design projects (GDPs) are an important element within our Motorsport MSc courses. The GDP is an applied, multidisciplinary, team-based activity, providing students with the opportunity to apply principles taught during their MSc courses. With support from the Motorsport Steering Committee and wider industry community, Cranfield's GDPs provide MSc students with experience of working on real challenges which the motorsport sector faces now and in the future.

Courses

The world of motorsport is a hotbed of innovation, with engineers and designers pushing the boundaries of what's possible on the track. Each race presents new challenges, new problems to solve and new opportunities to develop cutting-edge technology.

As an engineer in the motorsport sector, you'll be at the forefront of advancements in material science, aerodynamics, engine development and data analysis.

Modules are listed in the order they are delivered.

MSc by Research

This is an intensive research degree that allows you to demonstrate your ability to conduct research, while benefiting from the support of your supervisor. At the end of the course you will submit a thesis that represents a contribution to knowledge, or the application of existing knowledge to new situations. In consultation with your supervisor and course director you can select a number of taught modules which complement your research topic, creating a personalised master's programme.

MSc by Research is available in the following areas:

- automotive and vehicle engineering,
- automotive robotics and vehicle mechatronics,
- connected and autonomous ground-based vehicles,
- motorsport engineering,
- motorsport mechatronics.

Those who would prefer a more focused and specialist year of study to create a deeper understanding of a particular topic are in great demand throughout the motorsport industry.

Your project can either relate to an existing industrial problem, or novel blue sky thinking. You can also consider doing this course part-time while continuing to work.

Cranfield has recently teamed up with Oracle Red Bull Racing, so some research students may be able to obtain hands-on industrial experience. For more information about our MSc by Research qualification see **www.cranfield.ac.uk/research**.

Advanced Motorsport Engineering

www.cranfield.ac.uk/motorsport | **Full-time** | **MSc**

Motorsport is an exacting world that requires total commitment from its engineers. Without their skills and expertise, teams don't even get to race. This MSc will hone your skills and expertise in relation to motorsport and high-performance engineering through a rigorous combination of teaching and motorsport-related project work.

Modules

- Introduction to Motorsport,
- Motorsport Powertrains,
- Motorsport Electronics and Data Acquisition,
- Motorsport Vehicle Dynamics,
- The Business of Motorsport,
- Motorsport Aerodynamics,
- Motorsport Structural Analysis,
- Computational Fluid Dynamics for Motorsport,
- Composite Structures for Motorsport.

Accredited by: Engineering Council accredited degree; IET The Institution of Engineering and Technology; Accredited by Institution of Mechanical Engineers; Royal Aeronautical Society

Advanced Motorsport Mechatronics

www.cranfield.ac.uk/motorsportmech | **Full-time** | **MSc**

Mechatronics in motorsport plays an increasingly important role in achieving competitive advantage. By enhancing the integration of a vehicle's mechanical and electronic systems you will be able to create intelligent systems capable of adapting to the rapidly changing conditions within the racing environment.

The Advanced Motorsport Mechatronics MSc aims to provide students with a sound understanding of the fundamental scientific, engineering and managerial principles involved in motorsport. The focus is on the "mechatronics" aspect of the discipline, involving the engineering of advanced control systems, multi-domain computer modelling, in-vehicle communication networks, electromechanical and embedded systems, hardware-in-the-loop validation and systems integration.

Modules

- Introduction to Motorsport,
- Motorsport Powertrains,
- Motorsport Electronics and Data Acquisition,
- Motorsport Vehicle Dynamics,
- The Business of Motorsport,
- Mechatronics Modelling for Vehicle Systems,
- Advanced Control and Optimisation,
- Embedded Vehicle Control Systems,
- Vehicle Control Applications.

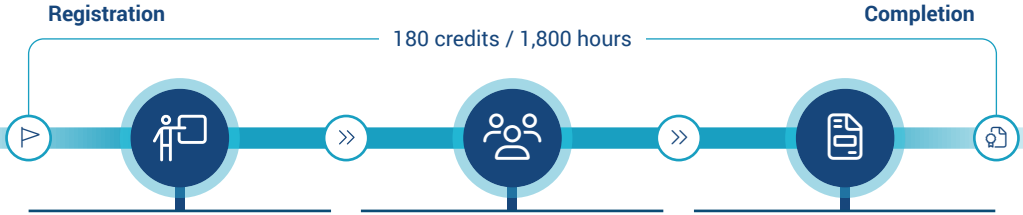
Accredited by: Engineering Council accredited degree; IET The Institution of Engineering and Technology; Accredited by Institution of Mechanical Engineers

The compulsory and (where applicable) elective modules offered for the 2024-25 academic year are shown to give you an indication of the current course content. To keep our courses up-to-date, relevant and for practical purposes, modules may be subject to change from cohort to cohort; please check our website for the latest information.

Course **structure**

Our specialist, sector-focused master's courses are set up and developed in close collaboration with industry partners, ensuring the content of our courses remains industry-relevant and employers are impressed with our graduates' business-readiness.

This diagram illustrates the standard course structure for our master's programmes. Please check your course structure online for more detailed information.



Taught programme

An intensive learning experience providing the knowledge you need to excel in your specialist field.

Group project

The ability to understand how your part of a project affects the whole, giving you **a head start for the world of work.**

Individual project

An opportunity to think and work in an original way. For example, this could be working on a project for a university partner, delving deeper into an area of specific interest or a real-world challenge in the sector you want to work in.

Group projects

Cranfield's group project experience provides you with the opportunity to take responsibility for a consultancy-type project while working under academic supervision.

Some recent projects include:

- conceptual design and performance prediction of a hybrid F2 sidecar,
- competition vehicle for Electric Dakar, conceptual design and performance prediction,
- concept designs for a land-speed-record motorcycle,
- Cranfield formula electric series design concepts,
- green Gulf: low environmental impact competition car to compete in the Gulf States,
- hybrid hillclimb competition vehicle design: the downhill/uphill racer.

Industry **links**

Cranfield has unrivalled links with motorsport. You will benefit from our extensive contacts and track record of close collaboration with the motorsport sector. These links include our industrial advisory panel and project supporters.

Industrial advisory panel

Cranfield University is located in Motorsport Valley®. Our courses are reviewed each year by a panel of industry advisors from leading companies and institutions in the sector. This ensures that the skills you acquire are up-to-date and what employers want. Some of the companies represented on our motorsport industrial advisory panel include: Cosworth, Formula 1, Mercedes AMG PETRONAS F1 Motorsport, Prodrive, Red Bull Advanced Technologies. See the full list of advisory panel members on the course webpage.

Supported projects

The group and individual projects that you will undertake as part of your course are often run in collaboration with our industrial partners. We have state-of-the-art facilities to help you gain real-life experiences and the majority of our graduates have a number of job offers before they finish the course.

Careers

Our alumni can be found around the world implementing motorsport innovation for competitive advantage. Here are some examples of the roles our graduates have gone on to and the organisations they work for:

Roles:

- Aerodynamicist,
- Design Engineer,
- Performance Engineer,
- Powertrain Control System Engineer (Mechatronics),
- Powertrain Engineer,
- Race/Aero-Performance Engineer,
- Vehicle Simulation Engineer (Mechatronics).

Organisations:

- Alpine,
- Aston Martin F1 Team,
- Envision Virgin Racing Formula E,
- Honda Performance Development,
- Hyundai World Rally Championship,
- McLaren Racing,
- Mercedes-AMG PETRONAS F1,
- NASCAR,
- Red Bull Racing and Red Bull Technology,
- Scuderia Ferrari,
- Virtuosi Racing,
- Yamaha Moto GP Team.

Cranfield University is a member of a select group of universities worldwide, which Ferrari partners with for their F1 Engineering Academy.

Academic **staff**

You will be taught by a wide range of subject specialists at Cranfield and from industry, who draw on their research and industrial expertise to provide stimulating and relevant input to your learning experience.

The Programme Director, Course Director and Admission Tutors are shown below. We also have a wide range of highly experienced guest lecturers, all working in the motorsport and automotive domain.

Professor James Brighton,

Head of Cranfield Advanced Vehicle Engineering Centre, Programme Director for Automotive and Motorsport courses

www.cranfield.ac.uk/jlbrighton

James has over 25 years' experience working at Cranfield University in the area of automotive and motorsport vehicle engineering. Hs is currently module lead for Motorsport Vehicle Dynamics and leads a large portfolio of industrial research programmes for vehicle manufacturers worldwide. His motorsport research encompasses vehicle dynamics, tyre dynamics performance simulation and Hardware-in-the-Loop (HiL) and Driver-in-the-Loop (DiL) test rig development

Dr Kim Blackburn,

Lecturer in Off Road and Motorsport Vehicle Engineering

www.cranfield.ac.uk/kblackburn

Kim is the Course Director for our Motorsport MSc courses. He is a specialist in instrumentation and data acquisition and the design and control of mechatronic systems. He is also active in the area of applied aerodynamic measurements in Formula One and British Touring Car Championship. He also manages our advanced rig test capability used by race teams from around the world.

Efstathios Siampis,

Lecturer in the Advanced Vehicle Engineering Centre

www.cranfield.ac.uk/esiampis

Efstathios is Admissions Tutor for our Motorsport Mechatronics MSc and specialises in the advanced control of vehicle systems, including suspension and powertrain. He works across the motorsport and automotive sector. His research interests include vehicle systems modelling, autonomous vehicle dynamics, optimal control and estimation and embedded systems.

Dr Veronica Marchante Rodriguez,

Research Fellow in Thermoplastic Nanocomposites

www.cranfield.ac.uk/vmarchanterodriguez

Veronica has a PhD in Chemical Engineering and has worked in composites-related research since she joined Cranfield University. She is Admissions Tutor for our Advanced Motorsport Engineering MSc and is module leader for the Composite Structures for Motorsport module.

Key facts and statistics

Course information

Full-time
One year.

Start date
September/October.

Award
MSc.

Fees
Please see the individual course pages on our website for full fee information and full-time or part-time options. Terms and conditions apply.

You also have the opportunity to apply for the Fédération Internationale de l'Automobile (FIA) scholarship and the Tyler James Alexandra scholarship.

See **www.cranfield.ac.uk/motorsportscholarship**

See **www.cranfield.ac.uk/fees**

Cohort profile*

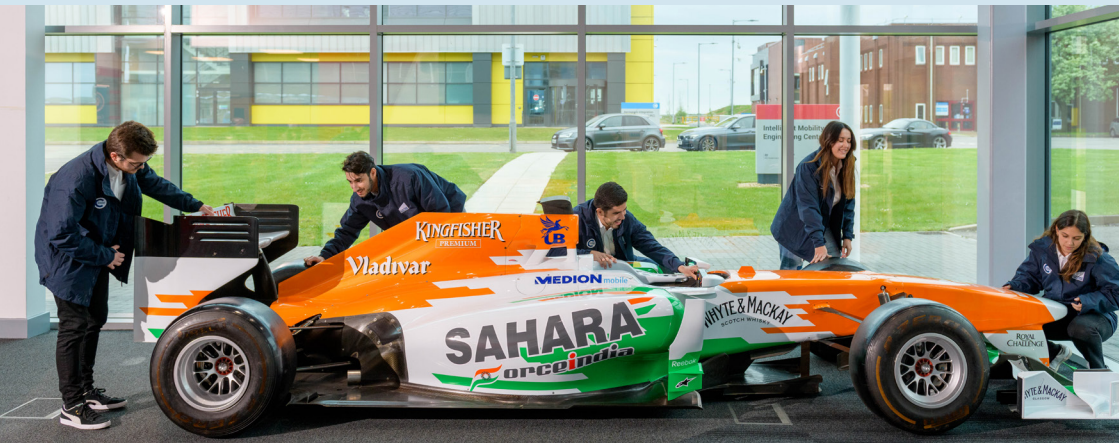
Geographic spread
48% UK.
52% International.

Typical age
20–40.

Average cohort size
33 Advanced Motorsport Engineering.

11 Advanced Motorsport Mechatronics.

*These figures give an indication of the course make-up at registration across our motorsport courses for the entry year 2023-2024.



Useful **information**

Financing your studies

Whether you are a UK-based or international student, we provide information, advice and a range of online tools to help you put together the funding package you need. Take a look at our funding finder which provides a searchable database of sources of financial support. We also offer bursaries for high quality applicants. Visit our website where we provide a range of additional sources of potential funding and helpful organisations and contacts for information, advice and guidance.

Learn more at **www.cranfield.ac.uk/funding**

More than a degree with the **Cranfield Enhance programme**

Cranfield graduates are valued for their distinctive skills and capabilities. We have developed these programmes to complement and enhance what you learn on your chosen qualification. On the Cranfield Enhance programme, you will be able to earn 'digital badges' in areas such as employability and entrepreneurship to showcase your new skills to prospective employers.

Read more at **www.cranfield.ac.uk/enhance**

"Cranfield kept coming out top with its impressive list of lecturers, smaller cohort size, group design and individual research projects, and expansive network of alumni. It was the combination of those characteristics and the opportunity to live and work abroad that led me to choose Cranfield."

Andrea Preacher,
Vehicle Systems Engineer, NASCAR,
(Advanced Motorsport Engineering MSc 2022)

Life at **Cranfield**

A welcoming, professional campus community.

Explore our University

You can personalise your virtual visit to our campus by choosing the subject area you are interested in on our interactive tool:

virtualexperience.cranfield.ac.uk

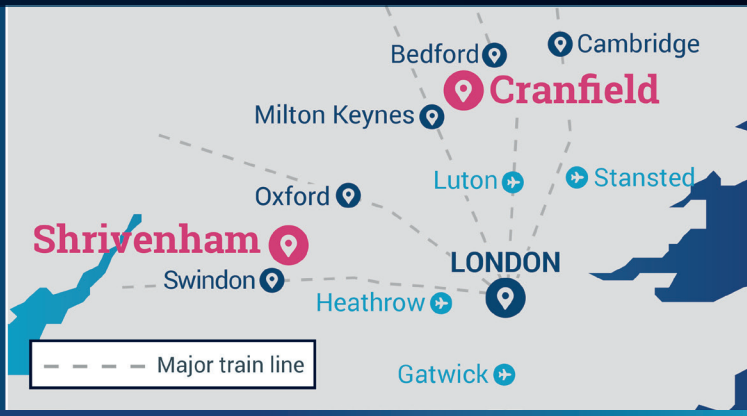
How to **apply**

Read more about our entry requirements and how to apply at **www.cranfield.ac.uk/apply**

Our **location**

Located just over an hour from London in the English countryside, Cranfield's campus environment supports close, working relationships between our multinational postgraduate students and academic and industry experts.

www.cranfield.ac.uk/visit



www.cranfield.ac.uk/transportsystems

Our sector study areas:

Aerospace,
Defence and Security,
Energy and Sustainability,
Environment and Agrifood,
School of Management,
Manufacturing and Materials,
Transport Systems,
Water.

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For a full list of Cranfield courses, please see our prospectus and website.

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