



Advanced Motorsport Mechatronics MSc

MSc

This course 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, which is 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. You will cover design, testing and operation of competition vehicles, and related aspects of control engineering, computer modelling, embedded systems, alongside vehicle dynamics, vehicle systems, and management techniques related to motorsport. You will be taught the skills required for the planning, execution and reporting of motorsport projects and to prepare you for a variety of roles in motorsport.

Course structure

The Advanced Motorsport Mechatronics MSc course consists of nine one-week taught modules, a motorsport mechatronics group design project and an individual thesis project.

Individual project

Individual thesis projects allow the students to deepen their understanding through research work related to motorsport mechatronics. Students self-manage their thesis projects with support from their academic supervisor and industry contact, if part of their project. The conclusion of their research work is a concisely written thesis report and the presentation of a poster outlining their project.

Group project

Our motorsport related group design projects have proven very successful in generating new conceptual designs, which subsequently have been implemented in competition vehicles; they have even influenced the formulation of technical and sporting regulations. The Advanced Motorsport Mechatronics MSc group design project is an applied, multidisciplinary team-based activity, providing students with the opportunity to apply principles taught during their Master’s course.

Future career

Motorsport is a highly competitive sector. Studying at Cranfield will immerse you in a highly focused motorsport engineering learning experience, providing you with access to motorsport companies and practitioners. Securing employment is ultimately down to the student who completes the job applications and attends the interviews. Successful students go on to be part of a network of engineers. You will find Cranfield alumni working across motorsport and the high performance engineering sector.

Example modules

Modules form only part of the course, with the project(s) and these making up the balance. Please see the course structure for details.

The list below shows the modules offered in the 2019-20 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change – please see the webpage for the latest information.

Compulsory:

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

Duration:

MSc: Full-time - one year,

Start date:

September.

Location:

Cranfield Campus.

Entry requirements:

A First or second class UK Honours degree or its international equivalent in engineering, including electronics, a relevant STEM discipline such as engineering, aerodynamics, physics or applied mathematics. You must have A-Level mathematics and physics, or their international equivalent.

Applicants who do not fulfil the standard entry requirements can apply for the Pre-master’s in Engineering programme, successful completion of which will qualify them for entry to this course for a second year of study.

ATAS Certificate:

Students requiring a visa to study in the UK may need to apply for an ATAS certificate to study this course.

Contact details

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For further information please visit

www.cranfield.ac.uk/motorsportmech

*Subject to University approval

Every effort is made to ensure the information on this sheet is correct at the time it was produced in September 2019. Please check the web pages for the latest information.