

Autonomous Vehicle Dynamics and Control MSc

www.cranfield.ac.uk/AutonomousVehicleDC



The global market for drones and autonomous aerial vehicles is rapidly growing. With a rise in applications for unmanned aerial vehicles (UAV) and uncrewed aircraft systems (UAS), the defence and aerospace industries seek graduates conversant in key aspects of autonomy including: dynamics and control, guidance and navigation, decision making, sensor fusion, data and information fusion, communication and networking.

Students on the Autonomous Vehicle Dynamics and Control MSc benefit from a distinct educational experience and unique facilities, including our drone laboratory, allowing you to gain hands-on experience in the development of the autonomous flight systems and technologies of tomorrow. The course content has been designed based on advice and industry insights from our industrial advisory board, comprising industrial representatives from big primes to small- and medium-sized enterprises.

Who is it for?

This course provides graduates from a range of disciplines with the advanced skills that can be applied to the security, defence, marine, environmental and aerospace industries. Typically, students have academic backgrounds in engineering, science, physics or applied mathematics and have a keen interest in aerospace and autonomous aerial vehicles.

Your career

The industry-led education makes Cranfield graduates some of the most desirable all over the world for recruitment by companies competing in the autonomous vehicle market including:

- BAE Systems,
- Defence Science and Technology Laboratory,
- MBDA,
- Other companies from our industrial advisory board.

Graduates from this course will be equipped with the advanced skills which could be applied to the security, defence, marine, environmental and aerospace industries. This approach offers you a wide range of career choices as an autonomous systems engineer, design engineer or in an operations role, at graduation and in the future.

Cranfield's Career Service is dedicated to helping you meet your career aspirations. You will have access to career coaching and advice, CV development, interview practice, access to hundreds of available jobs via our Symplicity platform and opportunities to meet recruiting employers at our careers fairs.

Overview

Start date October

Duration MSc: Full-time one year;

Qualification MSc

Study type Full-time

Structure

Taught modules 40%, individual research project 40%, group project 20%

Campus Cranfield campus

Entry requirements

We welcome applications from talented individuals of all backgrounds and each application is considered on its individual merit. Usually applicants must hold:

A UK lower second-class (2:2) undergraduate degree with honours, as a minimum, or equivalent international qualification.

Ideally, applicants will have studied in an engineering, engineering science, physics, applied mathematics or other appropriate applied science discipline.

Find information about equivalent qualifications in your country on our International entry requirements page.

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

Fees

Please see **www.cranfield.ac.uk/fees** for detailed information about fee status, full-time and part-time fees as well as deposit requirements and bursary and scholarship information.

Course details

The taught course element consists of lectures in three areas: dynamics, control systems, and autonomous systems and technology. The MSc course consists of two equally weighted components, taught modules and individual research project, and a group project.

Modules

Keeping our courses up-to-date and current requires constant innovation and change. The modules we offer reflect the needs of business and industry and the research interests of our staff. As a result, they may change or be withdrawn due to research developments, legislation changes or for a variety of other reasons. Changes may also be designed to improve the student learning experience or to respond to feedback from students, external examiners, accreditation bodies and industrial advisory panels.

To give you a taster, we have listed below the compulsory and elective (where applicable) modules which are currently affiliated with this course. All modules are indicative only, and may be subject to change for your year of entry

Compulsory modules

All the modules in the following list need to be taken as part of this course.

UAS Dynamics and Control

Aerial Communications Systems

UAS Modelling and Simulation

Sensor Fusion

Autonomous Vehicle Control Systems

Artificial Intelligence for Autonomous Systems

Guidance and Navigation for Autonomous Systems

Logic and Automated Reasoning

"I chose to study at Cranfield University due to its great reputation and the impact that students and staff play in the world. A highlight from my time at Cranfield has been being able to work with dedicated and very professional members of staff and academics. My Individual Thesis Project focused on Flight Controller Actuator Controller Development and was sponsored by Domin Fluid Power. After I finish my MSc my will be working full time in France at Safran Aircraft Engines."

Raphaël Bougault

current student, Autonomous Vehicle Dynamics and Control MSc

Accreditation

The Autonomous Vehicle Dynamics and Control MSc is accredited by the Royal Aeronautical Society (RAeS) on behalf of the Engineering Council as meeting the requirements for further learning for registration as a Chartered Engineer (CEng). Candidates must hold a CEng accredited BEng/BSc (Hons) undergraduate first degree to show that they have satisfied the educational base for CEng registration.



For more information contact our Admissions Team: T: +44 (0)1234 758082

Visit campus for yourself and meet current students and our academics at our next Open Day: www.cranfield.ac.uk/openday January 2025

Every effort is made to ensure that the information provided here is correct at the time it is published. Please check our website for the latest information.