Aerospace Vehicle Design - Avionic Systems Design option

MSc

With the ever increasing traffic density of civil aircraft, and the need for increased military precision in conflicts around the world, safer aircraft operations require more sophisticated avionic systems.

This specialist option of the MSc Aerospace Vehicle Design provides you with an understanding of avionic systems design, analysis, development, test and airframe integration.

Graduates of this course are eligible to join the Cranfield College of Aeronautics Alumni Association (CCAAA), an active community which hold a number of networking and social events throughout the year.

Course structure

The Avionic Systems Design option consists of sixteen mandatory modules and six elective modules. You are also required to complete a group design project and an individual research project. A unique feature of the course is that we have four external examiners, two from industry who assess the group design project and two from academia who assess the individual research project.

Individual project

The individual research project aims to provide the training necessary for you to apply knowledge from the taught element to research, and takes place over six months. The project may be theoretical and/or experimental and drawn from a range of topics related to the course and suggested by teaching staff, your employer or focused on your own area of interest.

Group project

The extensive group design project is a distinctive and unique feature of this course. This teamwork project takes place over six months, and recreates a virtual industrial environment bringing together students with various experience levels and different nationalities into one integrated design team.

Future career

This MSc is valued and respected by employers worldwide. The applied nature of this course ensures that our graduates are ready to be of immediate use to their future employer and has provided sufficient breadth of understanding of multidiscipline design to position them for accelerated career progression. Graduates from this option have gone onto pursue careers such as avionics design engineers or avionics systems engineers. Many of our former graduates occupy very senior positions in their organisations, making valuable contributions to the international aerospace industry. Typical student destinations include Airbus, BAE Systems, Dassault and Rolls-Royce.

Example modules

Compulsory:

- Aeronautical Communication Systems,
- Aerospace Software Engineering and ADA,
- Aircraft Performance,
- Aircraft Stability and Control,
- Avionics Air Traffic Control,
- Avionics Data Networking, Hardware Integration and Testing,
- Cockpit Environment,
- Control Systems,
- Design of Airframe Systems,
- Fault Tolerant Avionics Design,
- Flight Experience,
- Inertial and Satellite Navigation Systems,
- Integrated Navigation Systems,
- Modelling of Dynamic Systems,
- Radio Systems,
- Reliability, Safety Assessment and Certification.

Elective

- Aerospace System Development and Life Cycle Model,
- Aircraft Aerodynamics,
- Aircraft Power Plant Installation,
- Computer Aided Design (CAD),
- Initial Aircraft Design,
- Integrated Vehicle Health Management.

Duration:
MSc: Full-time - one year.

Start date:
October or March.

Location:
Cranfield Campus.

Entry requirements:
A first or second class UK honours degree (or equivalent) in an engineering discipline.

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.

Contact details

www.cranfield.ac.uk/enquiry

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For further information please visit
www.cranfield.ac.uk/avionicsystemsdesign