



Astronautics and Space Engineering MSc

www.cranfield.ac.uk/AstroSpaceEng



Space still remains largely unexplored and there is always the possibility of making new discoveries. The field of astronautics and space engineering have driven the development of many new technologies, such as GPS, satellite communications and weather forecasting. Although the space sector contributes significantly to the economy, it still represents a vast market with untapped potential for development and commercialisation.

There is a continuing need for talented employees with a good understanding of spacecraft systems engineering, coupled with a broad range of technical skills. Evolving constantly since 1987, the Astronautics and Space Engineering MSc has consistently prepared graduates for highly-successful careers in the space sector, from earth observation to planetary exploration, launch vehicles to spacecraft operations, and much more.

Who is it for?

The MSc is suitable for students with a first or second class UK honours degree or equivalent, in mathematics, physics or an engineering discipline. Students from other sciences, mathematics, or computing backgrounds are welcome to apply. We also offer a part time route for students looking to remain in employment while studying.

Your career

Cranfield University is heavily supported by the space industry in the UK. Many of these companies provide case study lectures, concepts and thesis topics for the individual research projects, and some actively support the group design projects. They also provide a guide to the content of the course, so they are confident that Cranfield are training people with the industry skills employers require. To help our students gain employment, we also arrange company visits and interview days with key employers.

As a result, our graduates work in space organisations including:

- Airbus Defence & Space,
- European Space Agency,
- SpaceX,
- Reaction Engines,
- Gravitilab,
- Clydespace,
- Surrey Satellite Technology Ltd,
- Thales Alenia Space,
- Lockheed Martin,
- Eumetsat,
- Open Cosmos.

Overview

Start date

October

Duration

One year full-time, two-five years part-time (by extended thesis)

Qualification

MSc

Study type

Full-time / Part-time

Structure

Taught modules 25%, group project 30%, individual research project 45%

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 mathematics, physics or an engineering 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.

ATAS clearance

This course requires Academic Technology Approval Scheme (ATAS) clearance.

ATAS is run by the UK Government's Foreign, Commonwealth and Development Office (FCDO) and applies to international students, except exempt nationalities, who need a visa to study in the UK. Further information can be found in our Application guide.

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 programme for the Astronautics and Space Engineering master's is generally delivered from October to September. A range of core modules allows you to gain a firm grounding in space engineering before opting for specialist modules to build your knowledge in a certain area.

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.

Space Systems Engineering

Space Propulsion

Astrodynamics and Mission Analysis

Elective modules

Select two from the list below

Advanced Composite Analysis and Impact

Aerospace Navigation and Sensors

Finite Element Analysis

Guidance Navigation and Control of Space Systems

Mathematics and Programming for Astrodynamics and Trajectory Design

Satellite Communications

Spacecraft Attitude Dynamics and Control

"I choose the Astronautics and Space Engineering MSc because I liked all the topics covered and it was what I needed to change my career. My group project was about the preliminary design of a space mission for studying reproduction of bees in space. Now that I have completed my MSc, I am starting a new job in the space industry as a control engineer. I can say I achieved my career goal thanks to completing my MSc at Cranfield University."

Flavio Vagnini

ADCS Engineer, Kongsberg NanoAvionics, (Astronautics and Space Engineering MSc 2022)

Accreditation

The Astronautics and Space Engineering 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 seeking Chartered status 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/oparday

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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.