



Aerospace Materials

MSc/PgDip/PgCert

This course covers how to improve and develop materials for aviation applications, including materials for airframe, aeroengine and the increased use of smart and functional materials. Plus the development of new materials, improvement of current materials, and application in new and novel structures. There is a need for engineering graduates with specialist skills to develop new materials for next generation aircraft and the future aerospace industry. During this course you will cover the improvement and development of materials for aviation applications, including materials for airframe, aeroengine and the increased use of smart and functional materials. The course combines Cranfield's long-standing expertise for delivering high-quality Masters' programmes in both aerospace and materials. Our courses receive strong support from the global aerospace industry, both the Original Equipment Manufacturers (OEM) such as Airbus and Rolls-Royce, as well as their tiers of supplier. There is a strong emphasis on applying knowledge in the industrial environment and all teaching is in the context of industrial application.

Course structure

The Aerospace Materials programme is made up of three components: a formal component comprising taught modules (40%), Group Project (20%) and Individual Thesis Project (40%).

Individual project

The individual thesis project, usually in collaboration with an external organisation, offers students the opportunity to develop their research capability, depth of understanding and ability to provide materials technology and engineering solutions to real problems in aerospace.

Group project

The group project experience is highly valued by both students and prospective employers. Teams of students work to solve an industrial problem. The project applies technical knowledge and provides training in teamwork and the opportunity to develop non-technical aspects of the taught programme. Part-time students can prepare a dissertation on an agreed topic in place of the group project.

Future career

This qualification takes you on to senior engineering positions in the aerospace industry with a focus on exploiting next generation materials. Many graduates find employment with one of their project sponsors.

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:

- Aerospace Materials, Properties and Processing,
- Composites Manufacturing for High Performance Structures,
- Failure of Materials and Structures,
- Finite Element Analysis,
- Functional Materials,
- Introduction to Materials Engineering,
- Material Selection,
- Surface Science and Engineering.

Duration:

MSc: Full-time - one year, Part-time - up to three years,
PgDip: Full-time - up to one year, Part-time - two years,
PgCert: Full-time - up to one year, Part-time - two years.

Start date:

Full-time: October. Part-time: throughout the year.

Location:

Cranfield Campus.

Entry requirements:

A first or second class UK Honours degree or equivalent in a relevant discipline. Other relevant qualifications, together with significant experience, may be considered.

Please visit www.cranfield.ac.uk/entryrequirements for more information. 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 you 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/AerospaceMaterials