



Advanced Materials

MSc/PgDip/PgCert

The discovery, development and application of advanced materials is at the heart of engineering innovation. Informed by our close research collaborations with industry we are developing the next generation of talented materials scientists and engineers. With a fundamental interest in materials science this course will develop your understanding of materials' properties, selection, processing and advanced design procedures. The students have several opportunities to make use of Cranfield's impressive facilities through practical project work. Facilities include the most comprehensive high-temperature coating test facilities to be found in a University, some of the best equipped precision machining laboratories in Europe, state-of-the-art clean rooms and an unparalleled welding laboratory.

Course structure

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

Individual project

Students select the individual project in consultation with the Course Director. The individual project provides students with the opportunity to demonstrate their ability to carry out independent research, think and work in an original way, contribute to knowledge and overcome genuine problems.

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

On completion of this MSc, graduates have a broader network of global contacts, increased opportunities for individual specialism and a wide range of careers options involving materials with responsibilities in research, development, design, engineering, consultancy and management.

Our graduates find careers with global industries alongside innovative start-ups and SMEs which have included:

Airbus,
Cytotec industries,
Marshalls Aerospace,
National Composites Centre,
Nippon Sheet Glass Co. Ltd,
Rolls-Royce,
Solvay.

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:

- Additive and Subtractive Manufacturing Technologies
- Composites Manufacturing for High Performance Structures
- Failure of Materials and Structures
- Finite Element Analysis
- General Management
- 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:

Candidates must possess, or be expected to achieve, a first or second class UK Honours degree or equivalent in a relevant science, engineering or related 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/AdvancedMaterials