

# **Aerospace Computational Engineering**

MSc

www.cranfield.ac.uk/AeroCompEng



Within the next five years, there will be a demand for engineers and leaders who will be using 100% digital techniques for aerospace applications, design and testing. This unique course covers a wide range of applications focused on aerospace computational aspects.

The Aerospace Computational Engineering MSc aims to enhance your skills through a detailed introduction to the state-of-the-art computational methods and their applications for digital age aerospace engineering applications. You will be able to meet the demand of an evolving workplace that requires highly-qualified engineers possessing core software engineering skills together with competency in mathematical analysis techniques.

# Who is it for?

This course is suitable for those with backgrounds in mathematics, physics, computer science or an engineering discipline. We also welcome applicants with relevant industrial experience such as qualified engineers working with computational methods wishing to extend their knowledge. The part-time option is suitable for qualified engineers looking to extend their knowledge and incorporate CFD into their skill set.

## Your career

The Aerospace Computational Engineering MSc is designed to equip you with the skills required to pursue a successful career in computational aerospace design and engineering, both in the UK and globally.

Our courses attract enquiries from companies in the rapidlyexpanding aerospace computational and digital engineering industrial sector across the world who wish to recruit high-quality graduates who have strong technical programming skills and can assess and evaluate the results of digital/numerical simulations. They are in demand by CAD vendors, commercial engineering software developers, aerospace and computational sciencerelated industrial sectors and research organisations and have been particularly successful in finding employment.

Companies that employ our graduates include:

- Airbus,
- · Capgemini Engineering,
- Dassault Aviation,
- easyJet,
- Safran Engineering Services,
- Thales,
- Volvo Group,
- · Yodel.

### Overview

#### Start date September

#### Duration

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

### Qualification

MSc, PgDip, PgCert

**Study type** Full-time / Part-time

#### Structure

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

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, computer science or an engineering subject.

#### 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 modules are delivered from October to April via a combination of structured lectures and computer-based labs. Many of the lectures are given in conjunction with some form of programming; you will be given time and practical assistance to develop your software skills.

Students on the part-time programme complete all of the compulsory modules based on a flexible schedule that will be agreed with the Course Director.

#### **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.

C++ Programming

**Computational Methods** 

**Computational Aerodynamics** 

Validation and Verification for Aerospace Applications

Modelling Approaches for Aerospace Applications

Numerical Modelling for Compressible Flows

Computational Engineering Structures

**CAD & Airframe Design** 

"I chose Cranfield because it has a reputation for being one of the best aerospace universities in the UK, with strong industry connections and a focus on practical experience. The MSc programme at Cranfield was the perfect opportunity to gain knowledge in aerospace engineering and computational techniques, which are crucial in today's rapidly evolving industry."

**Mei-Ying** 

current student, (Aerospace Computational Engineering MSc)

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.