Computational and Software Techniques in Engineering - Option in Computational Engineering Design

MSc

Computational Engineering Design (CED) covers the use of computers in all activities from the design to the manufacture of a product. It is at the forefront of information technology and of crucial importance to economies around the world. It is a vital part of many global industries including those of automotive, aerospace, oil, defence, finance and health.

This specialist option of the MSc Computational and Software Techniques in Engineering has been developed to reflect the wide application of CED and to deliver qualified engineers of the highest standard into industries operating in the fields of computational and software engineering.

Course structure

The course consists of core modules which a group design project, plus an individual research project.

Individual project

The individual research project allows you to delve deeper into an area of specific interest. It is very common for industrial partners to put forward real world problems or areas of development as potential research project topics. For part-time students it is common that their research project is undertaken in collaboration with their place of work.

Group project

This aims to provide you with invaluable experience of delivering a project within an industry structured team. The project allows you to develop a range of skills including learning how to establish team member roles and responsibilities, project management, delivering technical presentations and working with members who have a variety of backgrounds and experience.

Future career

There is a strong industry demand for talented individuals with expertise in engineering software development and technical programming skills in industry standard languages and tools. In this environment, where demand for the high calibre skills provided by this programme is outstripping supply, our graduates are in demand, internationally and across multiple industries and sectors. We receive many enquiries from engineering IT businesses during the programme, seeking to recruit our students on completion.

Example modules

Modules are delivered via a combination of lectures, tutorial sessions and computer-based workshops.

Compulsory:
• C++ Programming,
• Computational Engineering Fluids,
• Computational Engineering Structures,
• Computational Methods,
• Computational Optimisation Design,
• Digital Engineering and Product Design,
• Geometric Modelling and Design,
• Management for Technology,
• Visualisation.

Duration:
MSc: Full-time - one year, part-time - up to three years.

Start date:
September.

Location:
Cranfield Campus.

Entry requirements:
Applicants are required to either have a minimum of a UK second class Honours degree or its equivalent in aeronautical, mechanical or electrical engineering or computer science or be applying as part of a recognised double-degree programme with their home EU institution.

Applications from candidates with lesser qualifications but with considerable relevant work experience will be considered.

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.

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/compengdesign