# Computational and Software Techniques in Engineering – Option in Computational Intelligence for Data Analytics*

**MSc**

**Computationally intelligent data handling algorithms are crucial in a wide range of sectors that require fast and automated decision-making. This specialist option of the MSc Computational and Software Techniques in Engineering has been developed to deliver qualified engineers to the highest standard with a solid base of computer science skills and focused expertise.**

**You will be able to develop fast algorithms capable of dealing with a range of complex problems where intelligent decision-making or future predictions are based on understanding of data collections. Focus on enabling technologies aspects, high performance and cloud computing, and algorithm development related to machine learning and data analytics**

## Course structure

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

## Individual project

The individual research allows you to develop specialist skills by taking the theory from the taught modules and combining it with practical application. The research project gives you the opportunity to produce a detailed piece of work either in close collaboration with industry, or on a particular topic which you are passionate about.

## 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 industries such as aerospace, automotive, defence, financial and manufacturing 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,
- Management for Technology,
- Small-scale Parallel Programming,
- Cloud Computing,
- High Performance Technical Computing,
- Advanced Java and Advanced Python,
- Machine Learning and Big Data,
- Artificial Intelligence,
- Internet of Things.

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

**Start date:**
September.

**Location:**
Cranfield Campus.

**Entry requirements:**
Applicants are required to have either a minimum of a second class UK Honours degree (or equivalent) in an applied mathematics, aeronautical, mechanical or electrical engineering or computer science subject.

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.

*option is subject to University approval

## Contact details

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For further information please visit
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