

Welding Engineering MSc



Learn about the latest advancements in cutting-edge welding technologies and become a specialist in this ever-evolving field. Cranfield University's well-established and highlyrespected Welding Engineering MSc is among the few that provide the practical, industrial and theoretical knowledge required to pursue successful careers in the welding, materials and joining specialisms.

Gain expertise in this advancing field of manufacturing technology, that is so integral to the production of a wide-range of innovative products and that contributes to sustainability and the circular economy by addressing challenges in the manufacture, maintenance and repair of existing products. The course covers innovative welding techniques, automation, materials science, welding process optimisation principles, weld design and quality.

It will provide you with a fundamental understanding and applications of current and emerging welding technologies and an awareness of recent technical developments within the relevant industries. You will also learn the latest trends in advanced process monitoring, digital control and data management related to welding practices.

Who is it for?

Early career professionals:

• Our students hold degrees in a relevant science or engineering discipline and are keen to pursue a career in an advanced manufacturing sector using welding and joining technologies. You will join an elite group of welding professionals.

Experienced professionals:

• We welcome experienced and established professionals who are looking to learn about the latest advancements in welding technologies and refresh their knowledge. We offer flexible schedules through full and part-time modes of study.

Your career

Successful students develop diverse and rewarding careers in industry and in research. In industry as a welding professional, your role would include engineering management in a wide-range of organisations, deploying cutting-edge welding technologies. Roles include the management of welding manufacturing operations and management of design and fabrication of welded structures. The international nature of such activities means that you have a global career opportunity and will be part of our global alumni family.

Alternatively, in research, you may pursue doctoral study and subsequently move to academia and research.

Overview

Start date

Full-time: October, part-time: throughout the year

Duration One year full-time, two-five years part-time

Qualification MSc, PgDip, PgCert

Study type Full-time / Part-time

Structure Taught modules 40%, group projects 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 a relevant science, engineering or related discipline.

Find information about equivalent qualifications in your country on our International entry requirements page.

Applicants who do not fulfil the standard entry requirements can apply for the Pre-master's course, successful completion of which will qualify them for entry to this course for a second year of study.

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 course comprises seven assessed modules, a group project and an individual research project. The modules include lectures and tutorials and are assessed through practical work, written examinations, case studies, essays, presentations and tests. These provide the 'tools' required for the group and individual projects.

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.

Introduction to Materials

Welding Metallurgy

Welding Processes and Equipment

Advanced Welding Processes

Welding Systems and Research Methods

Management of Weld Quality

Design of Welded Structures

"My choice to study at Cranfield University compared to others was influenced by three main factors: my desire to study this course, the university's strong ties to industry, and its impressive ranking and reputation."

Hassan Esmaeili

Additive Manufacturing Engineer, Cranfield University, (Welding Engineering MSc 2023)

Accreditation

The Welding Engineering MSc is accredited by the Institution of Mechanical Engineers (IMechE), the Royal Aeronautical Society (RAeS), The Welding Institute (TWI), Institute of Materials, Minerals & Mining (IOM3) and Institution of Engineering & Technology (IET) on behalf of the Engineering Council as meeting the requirements for further learning for registration as a Chartered Engineer (CEng).

Candidates must hold a CEng accredited BEng/BSc (Hons) undergraduate first degree to show that they have satisfied the educational base for CEng registration.

Please note accreditation applies to the MSc award, PgDip and PgCert (if offered) do not meet in full the further learning requirements for registration as a Chartered Engineer.

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 February 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.