Academic year
2025/26 entry

Cranfield University

Postgraduate master's courses in

Sustainability and environmental management

within Agrifood, Design, Energy, Environment and Water

- Design Thinking MDes
- Environmental Engineering MSc
- Environmental Management for Business MSc
- Food Systems and Management MSc
- Future Food Sustainability MSc
- Global Environmental Change and Planetary Health MSc
- Renewable Energy MSc
- Sustainability Business Specialist Apprenticeship (with Sustainability MSc)
- Water and Wastewater Processes MSc

Cranfield University

Our reputation

We are the UK's only specialist postgraduate university in technology and management, with longstanding relationships with some of the most prestigious global companies. Our close collaboration with industry, and passion for the areas we operate in, will help your career.

Specialist postgraduate
A research-focused professional community.

We work with over
1,500
businesses and governments based in over **40 countries.**

Over £150m
of investment in new facilities over the past five years.

5,000+
postgraduate students from 100+ countries.

A network of
80,000+
alumni, from 170+ countries.

As we are postgraduate only, we are not listed in many league tables that help compare undergraduate universities.

What our alumni say

"It was impressive for me to find a university that specialises in topics regarding food. Also the facilities here; the laboratories, the different glass houses, it does impress me.

"It's a really good experience not only for you in an academic way, you can also find some growth in a professional and personal way."

Maria Fernanda Fuentes,
Research Platform Lead EPS, Syngenta,
(Future Food Sustainability MSc 2022)

Reasons to study **sustainability and environmental management** with us

1

Research excellence and industry-led

Our courses are designed with employers and careers in mind. An industrial advisory panel reviews our course material on a regular basis to ensure that content remains relevant to industry needs. In addition, our internationally-recognised research places you at the forefront of new techniques and innovations, enabling you to make an immediate impact.

2

Learning from the best

Taught by academic staff and industry practitioners, Cranfield attracts leaders from around the globe. The diverse mix of backgrounds, cultures, knowledge and experiences creates a rich teaching and research environment to tackle the environmental challenges facing the world.

3

Outstanding facilities

To help you during your studies we will provide you with access to a host of state-of-the-art facilities, such as the Crop Health and Protection (CHAP) centre, soil health and agri-technology facilities, 3D visualisation suite, the Cranfield Urban Observatory, water and wastewater technology pilot halls, as well as many more.

4

Projects with impact

As a specialist postgraduate university, we have unrivalled links to industry giving many students the opportunity to collaborate with both large and medium-sized companies. Industry-sponsored group and individual projects enable you to tackle the real-world issues and address global climate challenges.

5

Flexible learning

The majority of our MSc courses run on a full and part-time basis. For part-time students, the modular structure allows flexibility, making an MSc achievable even if you work full-time.

Courses

As a specialist postgraduate university, Cranfield has been leading the way on research and education in sustainability and environmental management for over 40 years.

Our research is making a positive impact on the environment, society and the growing green economy. We support government and business in the ongoing move to a low-carbon future. Our courses cover sustainability across and between agrifood, design, energy, environment and water.

Compulsory modules are listed in the order they are delivered. Elective modules are listed alphabetically.

Design Thinking

www.cranfield.ac.uk/designthinking	Full-time/part-time	MDes, PgDip, PgCert

This course integrates state-of-the-art approaches in design-driven innovation, design management and design research. We will provide you with tools and techniques to capture user insights, visualise complex data flows and develop innovative prototypes.

Compulsory modules

- User-centred Design,
- Design, Technology and Prototyping,
- Circular Innovation,
- Creative Enterprise and Entrepreneurship,
- Project Management.

Accredited by: CSD Accredited Course

The Centre for Design Engineering

On-site hydrogen pilot plant

Environmental Engineering

www.cranfield.ac.uk/ee | **Full-time/part-time** | **MSc, PgDip, PgCert**

This environmental engineering course is designed for science, engineering, and geography graduates who are passionate about the protection and improvement of environmental quality alongside enhancing the quality of human life. You will learn principles of environmental improvements, including the protection of environmental quality at both local, landscape and global scales.

Compulsory modules

- Principles of Engineering,
- Pollution Prevention and Remediation Technologies,
- Health, Safety and Environmental Risk,
- Modelling Environmental Processes,
- Sustainable Environmental Solutions.

Elective modules (select one)

- Air Quality Measurements and Management,
- Biofuels and Biorefining,
- Waste Management in a Circular Economy: Reuse, Recycle, Recover and Dispose.

Elective modules (select one)

- Environmental Water Quality,
- Energy Systems Case Studies,
- Land Engineering Principles and Practices.

Elective modules (select one)

- Catchment Management,
- Energy from Waste Operations,
- Resource Recovery for Water and Wastewater.

Attendance only module

- Engineering Design and Project Management.

Environmental Management for Business

www.cranfield.ac.uk/emb | **Full-time** | **MSc, PgDip, PgCert**

This course enables you to develop the advanced theoretical knowledge and practical skills required to critically evaluate complex environmental issues, develop effective strategies and lead their implementation. The diverse nature of the course attracts students from a variety of academic backgrounds, who then progress onto succesful careers in business, the public sector or NGOs.

Cranfield School of Management

This course is delivered in collaboration with our globally renowned School of Management.

Compulsory modules

- Principles of Sustainability,
- Decision Science,
- Environmental Policy and Risk Governance,
- Economic Valuation and Appraisal,
- Leading Corporate Sustainability,
- Sustainability and Environmental Assessment.

Elective modules

- Energy Entrepreneurship,
- Energy Systems Case Studies,
- Engineering Design and Project Management,
- Strategic Foresight.

Accredited by: CIWEM Chartered Institution of Water and Environmental Management Accredited Course; IEMA Transforming the world to sustainability

Food Systems and Management

www.cranfield.ac.uk/fsm | **Full-time** | **MSc, PgDip, PgCert**

The Food Systems and Management MSc equips graduates and professionals with essential knowledge of the entire food supply chain, covering topics like food quality, microbiology, postharvest technology, and supply chain management. This course is designed for candidates committed to advancing food safety and sustainability.

Compulsory modules

- Quality of Food and Beverages,
- Postharvest Technology,
- Food Diagnostics,
- Food Chain Resilience*,
- Leading Corporate Sustainability*,
- Food Safety,
- Agrifood Business Innovation.

*Modules delivered in collaboration with Cranfield School of Management.

Accredited by: IAgrE; ifst accredited DEGREE COURSE

IAgrE recognises Cranfield University postgraduate courses for professional registration.

Future Food Sustainability

www.cranfield.ac.uk/ffs | **Full-time** | **MSc, PgDip, PgCert**

The Future Food Sustainability MSc is a pioneering UK course designed to equip students with a blend of technology, science, and management skills to tackle global food security challenges. Developed in collaboration with industry and government, the course prepares graduates for impactful careers in sustainable food production, addressing climate change, resource use, and supply chain resilience.

Compulsory modules

- Principles of Sustainability,
- Soil Systems,
- Water and Sustainable Agrifood Systems,
- Food Chain Resilience*,
- Agricultural Informatics,
- Sustainability and Environmental Assessment,
- Technologies for Seeds and Crop Protection,
- Strategic Foresight.

*Modules delivered in collaboration with Cranfield School of Management.

Accredited by: IAgrE

IAgrE recognises Cranfield University postgraduate courses for professional registration.

Global Environmental Change and Planetary Health

www.cranfield.ac.uk/gec | **Full-time** | **MSc, PgDip, PgCert**

This exciting course has been developed to equip you with the multi-disciplinary knowledge needed to address the various environmental crises driven by climate change, human population growth, land cover and land use change and pollution. The elective modules will give you the flexibility you need to design your own studies by allowing you to focus on land, water or energy challenges, or select modules across the specialisms for a greater multi-disciplinary grounding.

Compulsory modules

- Fundamentals of Global Environmental Change,
- Decision Science,
- Environmental Policy and Risk Governance,
- Planetary Health,
- Sustainable Environmental Solutions.

Elective modules

- Air Quality Management,
- Catchments and Climate Change,
- Environmental Water Quality,
- Energy Systems Case Studies,
- Land Engineering Principles and Practices,
- Nature-based Solutions Design,
- Resource Recovery,
- Strategic Foresight,
- Sustainability and Environmental Assessment.

Accredited by: IAgrE

IAgrE recognises Cranfield University postgraduate courses for professional registration.

Renewable Energy

www.cranfield.ac.uk/re | **Full-time/part-time** | **MSc, PgDip, PgCert**

The Renewable Energy MSc will equip you with the advanced knowledge and skills to develop a successful career in the rapidly-growing renewable energy sector. Two study routes are available on this course: i) management ii) engineering.

Management route compulsory modules

- Renewable Energy Technologies 1,
- Renewable Energy Technologies 2,
- Solar Energy Engineering,
- Engineering Stress Analysis: Theory and Simulations,
- Fluid Mechanics and Loading,
- Design of Offshore Energy Structures,
- Energy Entrepreneurship.

Management route elective modules

- Energy Systems Case Studies,
- Short Research Project.

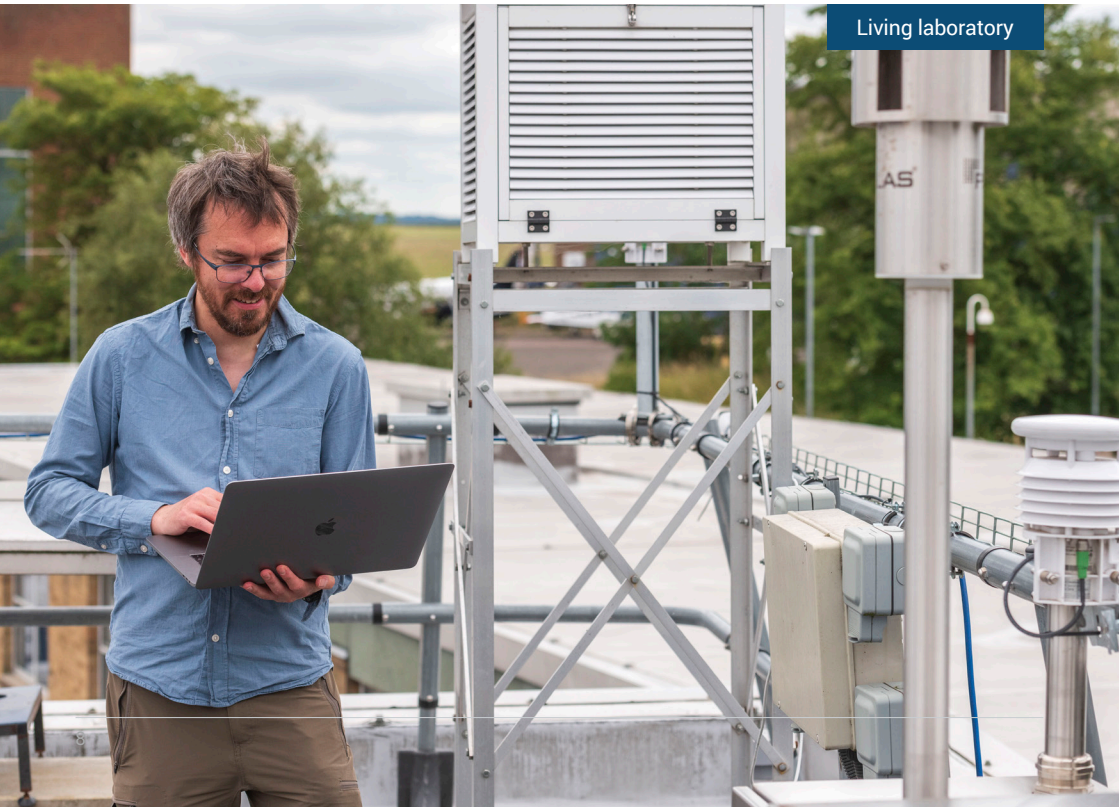
Engineering route compulsory modules

- Renewable Energy Technologies 1,
- Renewable Energy Technologies 2,
- Health Safety and Environmental Risk,
- Energy Economics and Policy,
- Sustainability and Environmental Assessment,
- Energy Entrepreneurship,
- Engineering Design and Project Management.

Engineering route elective modules

- Energy Systems Case Studies,
- Short Research Project.

Accredited by: Accredited by Institution of Mechanical Engineers; energy institute Accredited Course



Sustainability

www.cranfield.ac.uk/sustainabilitymsc	Online part-time or apprenticeship routes available	MSc

This MSc equips leaders with the technical knowledge and management capabilities to drive positive change in their organisations. Modules include topics such as Economics of Sustainability, Environmental Innovation, Strategic Foresight and Social Entrepreneurship.

Compulsory modules

- Personal Leadership for Sustainability,
- Principles of Sustainability,
- Leading Sustainable Business,
- Sustainability and Environmental Assessment,
- Economics of Sustainability,
- Performance Management and Reporting,
- Environmental Risks: Hazard, Assessment and Management,
- Risk Communication and Perception,
- Environmental Innovation,
- Sustainable and Circular Supply Chains,
- Circular Innovation,
- Strategic Foresight,
- Social Entrepreneurship,
- Sustainability in Practice.

This course is delivered in collaboration with our globally renowned School of Management.

Accredited by: IEMA Transforming the world to sustainability

Sustainability Business Specialist Apprenticeship

You can also study our Sustainability Business Specialist apprenticeship, delivered against the Sustainability L7 Standard. Apprenticeships provide a unique opportunity to blend academic studies with real-time work-based activity, supporting both individual and business development. Funding for eligible applicants employed and based in England can be allocated from the employer Apprentice Levy account.

Read more on our website: **www.cranfield.ac.uk/sustainabilityapprenticeship**

Water and Wastewater Processes

www.cranfield.ac.uk/waterandwastewaterprocesses	Full-time/part-time	MSc, PgDip, PgCert

This MSc is designed as a truly interdisciplinary course to equip you with the necessary skills to become the innovators, specialists, and knowledge integrators of tomorrow who will design, lead and deliver transformative solutions and change agendas. There are two study routes available on this course: i) engineering ii) environmental science.

Environmental Science route compulsory modules

- Global Water Sector,
- Water and Wastewater Treatment Principles,
- Process Science for the water sector,
- Water and Wastewater Treatment Processes,
- Advanced Water and Wastewater Treatment Processes,
- Catchments and Climate Change,
- Environmental Water Quality.

Engineering route compulsory modules

- Global Water Sector,
- Water and Wastewater Treatment Principles,
- Process Science for the water sector,
- Water and Wastewater Treatment Processes,
- Advanced Water and Wastewater Treatment Processes,
- Hydraulics and Pumping Principles for Water,
- Risk and Asset Management for Water and Wastewater.

Elective modules – both routes

- Nature-based Solutions Design (Science),
- Resource Recovery (Science).

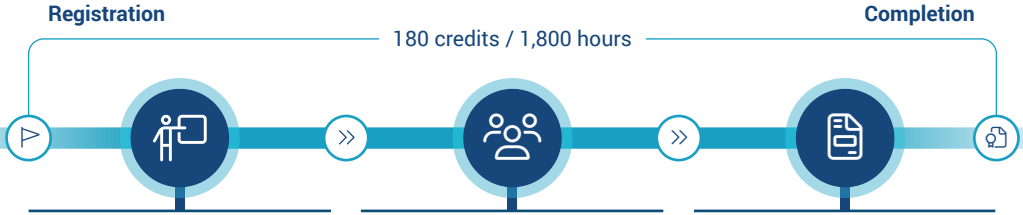
The compulsory and (where applicable) elective modules offered for the 2024-25 academic year are shown to give you an indication of the current course content. To keep our courses up-to-date, relevant and for practical purposes, modules may be subject to change from cohort to cohort; please check our website for the latest information.

On-campus wastewater treatment research facility

Course **structure**

Our specialist, sector-focused master's courses are set up and developed in close collaboration with industry partners, ensuring the content of our courses remains industry-relevant and employers are impressed with our graduates' business-readiness.

This diagram illustrates the standard course structure for our master's programmes. Please check your course structure online for more detailed information.



Taught programme

An intensive learning experience providing the knowledge you need to excel in your specialist field.

Group project

The ability to understand how your part of a project affects the whole, giving you **a head start for the world of work.**

Individual project

An opportunity to think and work in an original way. For example, this could be working on a project for a university partner, delving deeper into an area of specific interest or a real-world challenge in the sector you want to work in.

Group projects

- Application of novel technologies to reach net-zero greenhouse gas emissions in the fresh pasteurised milk supply chain – Deloitte.
- Carbon footprinting baseline – Speciality Produce.
- Fatigue life assessment of offshore wind turbine bolted connections.
- Innovative packaging technologies to improve shelf-life – It's Fresh!
- Monitoring landscape change – Peak District National Park.
- Peer to peer energy trading with battery electric vehicles.
- Working with Australian Aid to determine successes in community-managed rural water supplies.
- Working with Oxfam GB to choose the right sanitation technologies for refugee camps.

Academic **staff**

You will be taught by a wide range of subject specialists at Cranfield and from industry, who draw on their research and industrial expertise to provide stimulating and relevant input to your learning experience.

The list of academics below represents a small proportion of our staff; we also have a large number of highly-experienced guest lecturers.

Professor Ron Corstanje,

Professor of Environmental Data Science and Head of Cranfield Environment Centre

www.cranfield.ac.uk/rcorstanje

Ron specialises in the application of environmental models to understand the nature and behaviour of natural systems and processes so to better develop climate adaptation and mitigation strategies.

Professor Neil Harris,

Professor of Atmospheric Informatics

www.cranfield.ac.uk/nharris

Neil's current research interests are natural and anthropogenic emissions connected with climate change, ozone depletion and aviation. Neil was awarded the Natural Environment Research Council Overall Impact Award for his role in the development of the Montreal Protocol on substances that Deplete the Ozone Layer.

Dr Alice Johnston,

Lecturer in Environmental Data Science

www.cranfield.ac.uk/ajohnston

Alice is an ecologist and modeller, with interests in biodiversity and ecosystem process responses to environmental change. Her research spans predicting how invertebrates respond to multiple stressors such as plant protection products and habitat fragmentation to understanding how ecosystems regulate greenhouse gas emissions and temperature on a global scale. Alice completed a BSc (Hons) degree in Environmental Science at Newcastle University, followed by a PhD at University of Reading. Between her PhD and lecturer post at Cranfield, Alice consulted for industry as an ecological modeller and was awarded a NERC Independent Research Fellowship.

Paul Lighterness,

Programme Director, Lecturer in Product Design

www.cranfield.ac.uk/paullighterness

Paul is an experienced multidisciplinary designer, who has worked on a variety of international projects as a consultant, design strategist and design professional. He is experienced in pushing the boundaries in bringing exciting new products to market through user-centric research, ideation, product testing and fabrication

Professor Angel Medina Vaya,

Professor in Applied Mycology and Director of Environment, Agrifood and Water

www.cranfield.ac.uk/amedinavaya

Angel has focused his research interests on the impact that environmental stress has on the functioning of fungi (mainly mycotoxigenic species), the mechanisms used for ecophysiological tolerance, and the molecular basis of secondary metabolite production, especially mycotoxins.

Professor Nazmiye Ozkan,

Professor of Sustainable Energy Transitions and Head of Centre for Energy Systems and Strategy

www.cranfield.ac.uk/nozkan

Nazmiye is an energy economist with a background in urban and regional planning. She focuses on the interactions between social, economic, environmental and technological systems, from household to city levels, using socio-technical systems thinking. She leads research funded by UK Research and Innovation and serves as the UK National Director of the Hydrogen Production Technologies Centre, supported by the governments of the USA, UK, Canada and Australia.

Professor Ana Soares,

Professor of Biotechnology Engineering

www.cranfield.ac.uk/asoares

Professor Ana Soares is Professor of Biotechnology Engineering at Cranfield Water Science Institute and an International Water Association (IWA) Fellow. Leading the Resources Recovery Community of Practice at Cranfield, her research focuses on bacterial community behaviour, driving innovations in wastewater treatment and resource recovery. Her work delivers practical, cost-effective solutions for both municipal and industrial wastewater, contributing to sustainable, global advancements in effluent treatment technologies.

Dr Theresa Mercer,

Senior Lecturer in Environmental Sustainability and Sustainability and Environmental Management Programme Director

www.cranfield.ac.uk/tmercer

Theresa is interested in environmental systems change following perturbations. Her teaching and research focus on education for sustainable development (ESD), environmental management and digital tools for future-proofing environment teaching and learning.

Professor Jane Rickson,

Professor of Soil Erosion and Conservation

www.cranfield.ac.uk/jrickson

With over 30 years of experience, Professor Jane Rickson specialises in soil degradation and sustainable land management. Her research focuses on soil functions that support ecosystem services like water regulation, agricultural production and carbon storage. Jane works with research councils, industry, farmers and policymakers on projects such as developing soil management systems and understanding soil protection. She also provides consultancy in soil erosion and remediation. Jane is a Fellow and former President of the Institution of Agricultural Engineers and a Chartered Environmentalist. She is also a Fellow of the Higher Education Academy and a member of the Institute of Professional Soil Scientists.

Industry **links**

Cranfield has unrivalled links with industry, and you will benefit from our extensive contacts and track record of close collaboration with decision-makers in your chosen sector.

These benefits range from the various high-profile guest speakers we are able to attract, to the ability to network with future employers at our group presentation days and careers fairs held on campus.

Industrial advisory panel

Our courses are reviewed each year by a panel of industry and government specialists working in the relevant sector. This ensures that the skills you acquire are up-to-date and what employers want.

Careers

Our alumni can be found around the world in leading roles. Here are a few examples of the roles our alumni have secured in recent years:

Roles:

- Bioinformatician,
- Computational Biologist,
- Design Engineer,
- Environmental Consultant,
- Head of Water Quality,
- National Project Coordinator,
- Project Delivery Manager,
- Renewal Energy Analyst,
- Researcher,
- Resilience Officer,
- Risk Scientist,
- Senior Consultant,
- Sustainability Manager,
- Wind Farm Developer.

Companies:

- BP,
- EDF,
- Environmental Agency,
- GlaxoSmithKline,
- Lidl (UK),
- PepsiCo,
- Rolls-Royce Marine AS,
- Scottish Power,
- Severn Trent Water,
- Syngenta,
- UNICEF,
- Unilever,
- Warburtons,
- World Food Programme.

Read more on our website
www.cranfield.ac.uk/careers

Key facts and statistics

Course information

Full-time
One year.

Part-time
Two to three years. See the course page for more information about part-time study.

Start date
Various. Please visit course pages for more information.

Award
MDes/MSc/PgDip/PgCert.

Fees
Please see the individual course pages on our website for full fee information and full-time or part-time options. Terms and conditions apply. See **www.cranfield.ac.uk/fees**

Cohort profile*

Geographic spread
26% UK.
74% International.

Typical age
20–64.

Average cohort size
29.

Gender
55% Male.
45% Female.

*These figures give an indication of the course make-up at registration across our courses for the entry 2023-2024.

Inside the CHAP plant phenotyping and soil health facility.

Useful **information**

Financing your studies

Whether you are a UK-based or international student, we provide information, advice and a range of online tools to help you put together the funding package you need. Take a look at our funding finder which provides a searchable database of sources of financial support. We also offer bursaries for high quality applicants. Visit our website where we provide a range of additional sources of potential funding and helpful organisations and contacts for information, advice and guidance.

Learn more at **www.cranfield.ac.uk/funding**

More than a degree with the **Cranfield Enhance programme**

Cranfield graduates are valued for their distinctive skills and capabilities. We have developed these programmes to complement and enhance what you learn on your chosen qualification. On the Cranfield Enhance programme, you will be able to earn 'digital badges' in areas such as employability and entrepreneurship to showcase your new skills to prospective employers.

Read more at **www.cranfield.ac.uk/enhance**

"Cranfield has helped me step out of my comfort zone and push myself towards being a better version of myself. The intensive year really helped me a lot. It was a great experience."

Vivek Jha,
(Environmental Management for Business MSc 2022)

Life at **Cranfield**

A welcoming, professional campus community.

Explore our University

You can personalise your virtual visit to our campus by choosing the subject area you are interested in on our interactive tool:

virtualexperience.cranfield.ac.uk

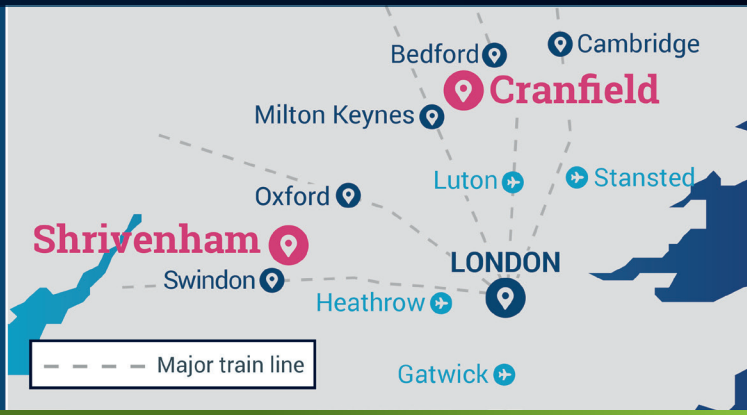
How to **apply**

Read more about our entry requirements and how to apply at **www.cranfield.ac.uk/apply**

Our **location**

Located just over an hour from London in the English countryside, Cranfield's campus environment supports close, working relationships between our multinational postgraduate students and academic and industry experts.

www.cranfield.ac.uk/visit



www.cranfield.ac.uk/savetomorrow

Our sector study areas:

Aerospace,
Defence and Security,
Energy and Sustainability,
Environment and Agrifood,
School of Management,
Manufacturing and Materials,
Transport Systems,
Water.

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blogs.cranfield.ac.uk

For a full list of Cranfield courses, please see our prospectus and website.

Cranfield University,
Cranfield, MK43 0AL, UK

T: +44 (0)1234 758082
E: study@cranfield.ac.uk
www.cranfield.ac.uk

Every effort is made to ensure that the information in this brochure is correct at the time it is printed.
Please check our website for the latest information. SWEE-SEM-November 2024.