

Postgraduate
master's courses in

Environment

Academic year 2024/25 entry

Advanced GIS and Remote Sensing MSc
Environmental Engineering MSc
Environmental Management for Business MSc
Global Environmental Change MSc
Sustainability Business Specialist Apprenticeship with Sustainability MSc

Cranfield University

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

88%

of our research is world-leading or internationally excellent

Research Excellence Framework (REF) 2021

Over £150 million

of investment in new facilities over the past five years

Top 30

in the world for Engineering – Mechanical, Aeronautical and Manufacturing
QS World University Rankings by subject, 2023

A professional network of **75,000+** alumni, from 177 countries

5,000+ postgraduate students from **100+ countries**

Six-time winner of the prestigious Queen's Anniversary Prize

As we are postgraduate only, we are not listed in league tables that help compare undergraduate universities, such as *The Times World Rankings* and *The Complete University Guide*.

"I chose to study at Cranfield because of the structure of the programmes, you don't just have theoretical knowledge which you gain through the modules, but you also have the opportunity to build your soft skills during the group project. It's also very rewarding when you get to work on real life problems."

Otobong Isong,
Environmental Engineering MSc



Reasons to study environment with us

1 Employment opportunities

The increased global focus on the environmental issues we face today provides a real opportunity to develop a career that will really make a difference to the world we live in and the post Covid-19 green economic recovery. Studying an Environment MSc at Cranfield will equip you with the knowledge and skills to be instrumental in leading change for a greener, more sustainable and resilient world. As a result many of our students secure relevant jobs before completing their course.

2 Leading academics

Our courses are delivered by our world-renowned academics and industry practitioners who are leading change across the sector. You will benefit from courses which integrate our internationally-recognised research into the teaching, placing you at the forefront of new techniques and innovations.

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, as well as many more.

4 Projects with industry

Industry-sponsored group and individual projects enable you to apply the technical knowledge you've gained during the modules to combat issues facing the sector now and in the future.

5 International accreditation

Most of our MSc courses are accredited by one or more professional institutions (see page 9). This provides you with the recognition of the academic standard achieved in preparation for employment.

6 Creating leaders in management and technology

Our MScs offer a balance between engineering, technology, science and management, to ensure that whatever your background we have the right course to take your career to the next level. The Environmental Management for Business and Sustainability MSc (see pages 4 and 5) are delivered in collaboration with our globally renowned School of Management.



Environment courses

Cranfield has been leading the development and implementation of methods for analysing and sustainably managing environmental resources for over 40 years.

Our research is making a positive impact on the environment, society, the growing green economy and the post Covid-19 green economic recovery. We support Government and business in the ongoing move to a low-carbon future. Our courses span environmental analytics, management and resource recovery.

Modules form 40% of the course content, with the group and individual projects making up the other 60%.

This brochure shows the modules being offered in the 2023/2024 academic year, to give you an idea of course content. To keep our courses relevant and up-to-date, modules are subject to change so please check the latest information on our website. All courses are available on a full- or part-time basis and are accredited, see page 9 for more information.

Advanced GIS and Remote Sensing

www.cranfield.ac.uk/GISandRemoteSensing • Accredited - see page 9

MSc, PgDip, PgCert

Developed in response to the increased global demand for multi-disciplinary managers, advisors and consultants in resource management, this course integrates the full range of geospatial technologies. It gives you the expertise you need to develop a career in the global geospatial sector across a wide range of application areas.

Modules

- Advanced GIS Methods,
- Aerial Photography and Digital Photogrammetry,
- Applied Earth Observation,
- Environmental Resource Survey,
- GIS and Spatial Data Management,
- Image Processing and Analysis,
- Scientific Python,
- Web Mapping.

Environmental Engineering

www.cranfield.ac.uk/environmentalengineering • Accredited - see page 9

MSc, PgDip, PgCert

This MSc will equip you with the knowledge and skills to tackle the cross-disciplinary issues of environmental protection and to address the needs of modern urban societies. You will learn principles of environmental improvements, including the protection of environmental quality at both local, landscape and global scales.

Modules

- Catchment Management,
- Cleantech in Water-Energy Food Nexus,
- Environmental Risks: Hazard, Assessment and Management,
- Land Engineering Principles and Practices,
- Modelling Environmental Processes,
- Pollution Prevention and Remediation Technologies,
- Process Emissions and Control,
- Waste Management in a Circular Economy: Reuse, Recycle, Recover and Dispose.

Environmental Management for Business

www.cranfield.ac.uk/emb • Accredited - see page 9

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 enables it to attract students from a variety of academic backgrounds, who then progress onto successful careers in business, the public sector or NGOs.

Modules

- Economic Valuation and Appraisal,
- Environmental Innovation,
- Environmental Policy and Risk Governance,
- Leading Corporate Sustainability,
- Principles of Sustainability,
- Risk Communication and Perception,
- Strategic Foresight,
- Sustainability and Environmental Assessment.

Global Environmental Change

www.cranfield.ac.uk/gec

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

- Cleantech in Water-Energy-Food Nexus,
- Decision Science for Global Environmental Change,
- Fundamentals of Global Environmental Change,
- Sustainable Environmental Solutions.

Elective modules

- Agricultural Informatics,
- Environmental Policy and Risk Governance,
- Good Ecological Status,

- Land Engineering Principles and Practices,
- Leading Corporate Sustainability,
- Managing Flood and Drought Risks,
- Pollution Prevention and Remediation Technologies,
- Process Emissions and Control,
- Risk Communication and Perception,
- Sustainability and Environmental Assessment,
- Waste Management in a Circular Economy: Reuse, Recycle, Recover and Dispose,
- Water, Society and Development.

Sustainability Business Specialist Apprenticeship with Sustainability MSc

www.cranfield.ac.uk/sustainabilityapprenticeship • Online, part-time or apprenticeship routes available
Accredited - see page 9

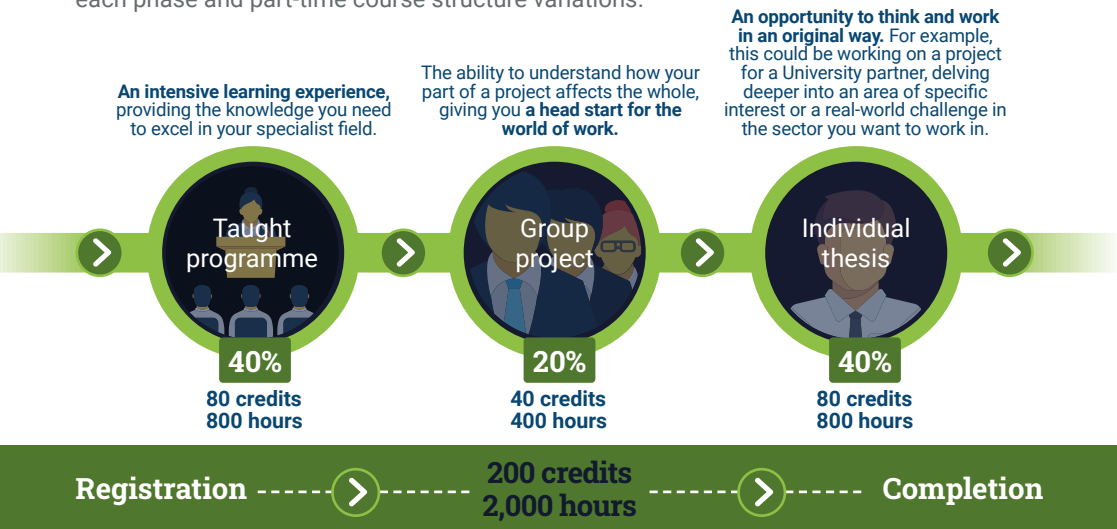
MSc

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.

Course structure

Our specialist, sector-facing master’s courses are set up and developed in close collaboration with industry partners, ensuring the content of our courses remain industry-relevant and employers remain impressed with your business-readiness.

This diagram illustrates the course structure of our full-time master’s courses. Please check your course structure online for more detailed information, including the weight of each phase and part-time course structure variations.



Industry-sponsored group projects

This is your opportunity to develop practical skills and take responsibility for a consultancy-type project with industry, working under academic supervision.

Some recent projects include:

- Monitoring landscape change for the **Peak District National Park**.
- Carbon footprinting baseline for **Speciality Produce**.
- Using multi-criteria decision analysis to evaluate the choices and trade-offs implicit with potential futures for **Research England and OxCam Arc local partners**.
- Future innovations in agricultural and environmental engineering in the UK for **Douglas Bomford Trust**.
- Sustainability and self-sufficiency audit for **South Ormsby Estate**.
- Water risks in horticulture for **Speciality Produce**

Industry links

Cranfield has unrivalled links with industry. Our students benefit from our extensive contacts and track record of close collaboration with Government and the environmental sector. These links include industrial advisory panels and project sponsors.

Industrial advisory panels

Our courses are reviewed each year by a panel of industry advisors from leading companies and institutions in the sector. This ensures that the skills you acquire are up-to-date and what employers want.

Some of the companies represented on our environment courses’ industrial advisory panels include:



Careers

An exciting career within the environment sector awaits you. Whatever your specialism there are numerous opportunities to shape your career and begin making a significant change to society.

You could soon join our graduates around the world, initiating change to the sector in roles and at organisations such as:

Advanced GIS and Remote Sensing	Environmental Engineering	Environmental Management for Business	Global Environmental Change
<p>Organisations: AECOM, Airbus, British Antarctic Survey, Cyient, Esri, Gloucester City Council, Mouchel, Network Rail, Ordnance Survey, Telespazio Vega.</p> <p>Roles: Business Intelligence Developer, Environmental Specialist, Forestry Coordinator, GIS Analyst, GIS Consultant, GIS Engineer, Planning Engineer.</p>	<p>Organisations: BP, Deloitte, Golder, Isle Utilities, Lidl UK, National Capital Commission, Ocedis SAS, Syngenta, Thames Water, URS Corporation.</p> <p>Roles: Environmental Consultant, Chemical Engineer, Civil Engineer, Lead Completions Engineer, Senior Consultant, Research Engineer, Supply Planner.</p>	<p>Organisations: Erdenes Oyu Tolgoi, GSK, KPMG, Maersk Management Consulting, National Energy Foundation, O2 (Telefonica UK), UBS, UNDP, World Food Programme.</p> <p>Roles: Account Director, Marketing Manager, National Project Coordinator, Principal Consultant, Project Delivery Manager, Senior Auditor.</p>	<p>Upon completion, this MSc will equip you to work in a range of organisations such as consultancies, businesses, think-tanks, and government and non-government organisations.</p>

Academic staff

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



Professor Ronald Corstanje, Professor of Environmental Data Science and Head of Cranfield Environment Centre

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.

www.cranfield.ac.uk/rcorstanje



Dr Kenisha Garnett, Senior Lecturer in Decision Science and Co-Director of MSc Sustainability

Kenisha's teaching and research focuses on the long-term sustainability of complex systems, employing futures methods that link evidence-based strategic risk with value judgements to inform the analysis of persistent trends and novel issues over short to long-term policy horizons.

www.cranfield.ac.uk/kgarnett



Professor Jim Harris, Professor of Environmental Technology

Jim is best known for his work in ecological restoration and systems ecology, particularly in characterising the role of the soil microbial community to provide unambiguous signals of the state of ecosystems across the land use spectrum.

www.cranfield.ac.uk/jaharris



Professor Neil Harris, Professor of Atmospheric Informatics

Neil's current research interests are the emissions and impacts of gases connected with climate change, ozone depletion and air quality. 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.

www.cranfield.ac.uk/nharris



Dr Theresa Mercer, Senior Lecturer in Environmental Sustainability and Environment Programme Director

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.

www.cranfield.ac.uk/t Mercer



Professor Jane Rickson, Professor of Soil Erosion and Conservation

Jane has over 30 years experience in soil and water engineering, specialising in soil degradation processes and sustainable land management. Her work focuses on understanding soil functions and their role in delivering ecosystems goods and services.

www.cranfield.ac.uk/jrickson

Key facts and statistics

Course information



Full-time
One year



Part-time
Up to three years

See the course page for more information about part-time study.



Start date
October



MSc/PgDip/PgCert

Not all courses offer all awards, see course information for details of awards offered.



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
23% UK
77% International



Average cohort age
20-29 years



Typical cohort size
14



40% Female
58% Male
2% Other

*These figures give an indication of the course make-up at registration for 2022-2023 for the three accredited courses listed below.

Accreditations

The **Environmental Engineering MSc** is accredited by the Chartered Institution of Water and Environmental Management and the Institution of Agricultural Engineers.

The **Environmental Management for Business MSc** is accredited by the Chartered Institution of Water and Environmental Management, and the Institute of Environmental Management and Assessment.

The **Advanced GIS and Remote Sensing MSc** is accredited by the Royal Institution of Chartered Surveyors and the Chartered Institution of Civil Engineering Surveyors.

The **Sustainability Business Specialist Apprenticeship with Sustainability MSc** is accredited by the Institution of Environmental Management and Assessment.



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, Entrepreneurship, Sustainability and Outreach to showcase your new skills to prospective employers.

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

Financing your studies

If you need advice on funding your course or living costs, we can provide information and a range of online tools to help you put together the funding package you need.

There is more information on our website:
www.cranfield.ac.uk/funding

How to apply

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



Life at Cranfield

A welcoming, professional campus community.

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



Have a look at some of our facilities in this virtual experience.

virtualexperience.cranfield.ac.uk

"I chose Cranfield because it's a very versatile course, it gives you a lot of background in environment and sustainability in a very broad sense. 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)



Cranfield University works with over

1,500 businesses and governments
based in over 40 countries

These organisations include:



Related programmes:

Agrifood: www.cranfield.ac.uk/agrifood

Design: www.cranfield.ac.uk/designthinking

Energy: www.cranfield.ac.uk/energy

Water: www.cranfield.ac.uk/water

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

www.cranfield.ac.uk/environmentandagrifood

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blogs.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-E-September 2023](#).