



Master's and doctoral research degrees

Prospectus
Academic year 2021/22 entry



Higher Education Statistics Agency (HESA) 2018-2019



DLHE longitudinal, 2017



Higher Education Business and Community Interaction (HE-BCI) Survey (three-year average between 2015 and 2018)



Higher Education Statistics Agency (HESA) 2018-2019



Plant science laboratory at Cranfield campus

Join us at one of our Open Days*:

Saturday 21 November

Saturday 13 March

Wednesday 26 May

Wednesday 21 July

Wednesday 1 September

To meet us at an event near you, find out more:

www.cranfield.ac.uk/events

*Dates are subject to change and may take place online – please see our website for the latest information

Welcome

to the UK's only specialist postgraduate university in technology and management

The coronavirus pandemic has affected all our lives and we are committed to ensuring that we provide you with the best possible experience when you study at Cranfield.

We have put stringent measures in place to keep you safe and healthy on our Covid-secure campus. We have developed new systems, protocols and cleaning regimes and are following strict social distancing and health guidelines. We have been awarded the internationally-recognised Health and Safety Standard ISO 45001, which underlines our commitment to best practice.

We are retaining all the elements that our students and industry partners tell us make a Cranfield degree special – hands-on learning in small tutorials, highly practical group and thesis projects and the development of your study skills working with your peers.

Working with over 1,500 companies and organisations around the world, our master's and doctoral-level students work on projects that address real business challenges, taking innovative solutions through to proof of concept in our large-scale facilities.

At Cranfield, you will develop your skills and expertise alongside professionals from around the globe. We know the value you place on meeting fellow students and becoming part of our professional community. Our rural location offers open spaces which are especially important at times like these.

The difference a Cranfield degree will make to your future is stronger than ever. Supporting you to achieve your potential is at the heart of our commitment to you.

In this prospectus, you will see our courses grouped by the business sectors we serve. We look forward to welcoming you when you embark on your programme of study.

Professor Sir Peter Gregson FEng MRIA
Chief Executive and Vice-Chancellor
Cranfield University



Why choose Cranfield?

Our master's and research students come from all over the world, bringing diverse perspectives, as well as industrial experience in technology and management to enrich your learning environment.



Triple Accredited
Management School
(AMBA, EQUIS,
AACSB International)

**WORLD
Top 50**

for Engineering
– Mechanical,
Aeronautical and
Manufacturing

QS World University
Rankings by Subject, 2020

81%

of our research
is classed as
**world-leading or
internationally
excellent**

Research Excellence
Framework, 2014

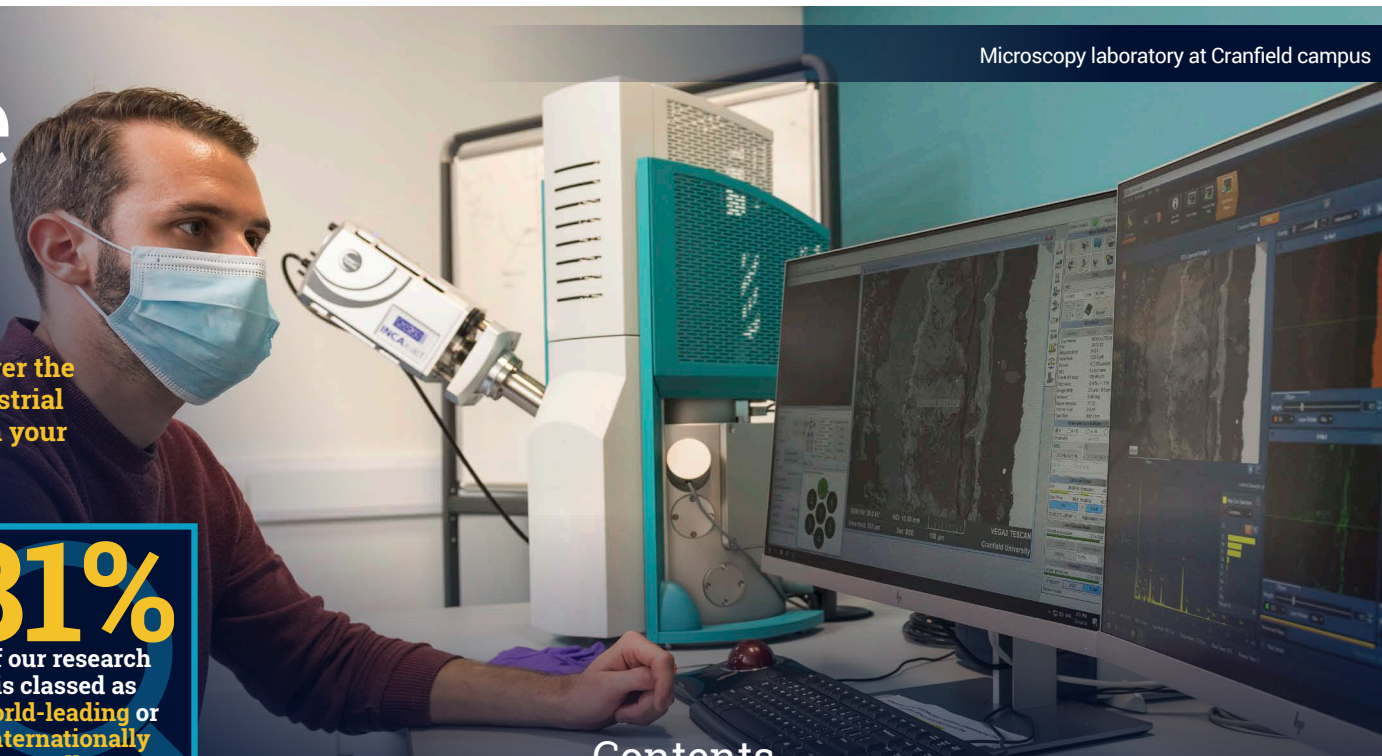
As a specialist, postgraduate-only university, we are not listed in league tables that help compare undergraduate universities, such as *The Times World Rankings* and *The Complete University Guide*.

"I wanted a blend of design and business from my master's degree, which, along with Cranfield's status, is why I wanted to study here. Since graduating, I have returned to the University and lectured several times to new cohorts. I have run workshops and given advice to students."

Rob Armes,
Senior User Experience Designer,
Red Badger, (Design, Strategy and
Leadership MDes 2015)



Microscopy laboratory at Cranfield campus



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A forward-thinking University

By choosing to study a master's or research degree at Cranfield, you will join our academics in addressing current and future challenges in technology and management, for the benefit of industry and society.



We are honoured to have been awarded the Queen's Anniversary Prize, the UK's most prestigious form of national recognition open to a UK university, on six separate occasions for our work in:

- **In-flight aerospace engineering training:** the University is home to the National Flying Laboratory Centre (NFLC), which brings together academics and technical specialists to deliver experiential learning for aerospace engineering students from over 20 UK universities and the global aviation industry.
- **Soil science:** our education and research in large-scale soil and environmental data for the sustainable use of natural resources worldwide has been providing practical advice on land use for more than 40 years.
- **Water and sanitation:** over a 25-year period, we have pioneered improved water services benefiting the quality of lives and livelihoods in the most impoverished parts of the world.
- **Aviation and safety:** our air accident investigation training and research contributes to international aviation safety.
- **Humanitarian demining:** we have developed and delivered bespoke education and training programmes to managers from over 60 countries including Afghanistan, Angola, Cambodia and Iraq, playing a unique role in developing sustainable, national capacities in landmine clearance.
- **Manufacturing management:** we designed a unique and innovative programme for strategic-level managers in the manufacturing industry.

Our specially-instrumented flying classroom provides an immersive flight test experience to around 1,200 students per year from over 20 universities who learn about aerodynamics and flight dynamics by collecting data while on board.

In 2019, the University received its sixth highly-prestigious Queen's Anniversary Prize for the work of the NFLC.



Find out more about our award-winning work:
www.cranfield.ac.uk/rankings

Fast-track your career

Whether you are looking to change direction or take the next step in your career – be that into the worlds of academia, business, charity or government – Cranfield provides you with the technical and business-relevant skills employers look for and entrepreneurs need to thrive.

Industry links

Every aspect of our unique teaching model prepares you to integrate with your chosen industry.

Industrial advisory boards

The content in our courses is designed for industry, by industry, ensuring our graduates have the skills employers want.

Group projects and presentations

Our courses are underpinned by our industrial partnerships. Master's group projects bring together students from across our themes to work on real-life challenges faced by industry.

Several courses hold annual project presentations, attended by industry sponsors, and provide opportunities for you to meet industry professionals in your area of interest.

Fellow students

On some modules, our full- and part-time students mix with some of the 8,000 executive development delegates. This provides a wealth of experience, fresh ideas and networking opportunities.

Core skills programme

In addition to your formal study or research programme, we offer a comprehensive programme of training modules to develop key skills to accelerate your career, such as sourcing and reporting to sponsors, and networking at, or speaking at, conferences.

Careers events

We hold multiple careers events throughout the academic year, across various sectors, with a mix of virtual and face-to-face offerings. Students can expect to discuss their career aspirations while gaining an understanding of employment opportunities from our employer partners.

We hold a variety of employer presentations, some of which are online and some on or off-campus. These tend to be smaller, more intimate events; offering students the chance to interact with their target employers. In addition, we regularly invite external guest speakers to impart their knowledge via webinars, online sessions and at events, on topics such as sector-specific job markets, networking, international job searching, LinkedIn and much more.



Photo taken prior to the Covid-19 pandemic

Career Development Service

Our team enhances the prospects of current students and alumni, by offering these main services: one-to-one coaching, skills workshops, CV refinement, cover letter development, assessment centre preparation and interview advice. We constantly evolve to meet the needs of our students, and to reflect changes in recruitment practices.



Online career management platform

Students have immediate access to our bespoke online platform Symplicity, where they can create a profile, book appointments and secure places at our virtual or physical events. The platform also serves as a live vacancy board, where you can search for and apply to exclusive vacancies not usually advertised elsewhere. The Employer Engagement team build strong relationships with organisations, who trust that Cranfield can provide graduates with the required skills, behaviours and knowledge to make an impact in their workplace.

"At Cranfield, I was given support on CV creation, cover letters and how to get through the assessment centre to get my current job at Rolls-Royce. The careers team acted as friendly support through a stressful process; they were available if you ever needed a chat or advice. I'd like to thank them for their continued support, even since I have left the University."

Richard Barnett,
Development Engineer, Rolls-Royce,
(Thermal Power MSc 2019)



Find out more: www.cranfield.ac.uk/careers

Enhance your future

Start your own business

We can offer pre-start up advice and mentoring in conjunction with our world-leading School of Management, and the Bettany Centre for Entrepreneurship.

From the spark of a new idea to the maturity of a fully-formed company, we can offer your business the opportunity to establish and grow in a science, technology and management environment. Cranfield is an endorsing body for the Start-up Visa Scheme, which supports graduates who have an outstanding business idea that they wish to put into practice in the UK.

We have partnered with Barclays to open Cranfield Eagle Lab, tailored to the aerospace and aviation technology community. You can benefit from business advice and mentoring from Barclays' experts and continue to access world-class specialists and facilities at Cranfield University after graduation.

Find out more: www.cranfield.ac.uk/businessincubation

Executive development

Over 8,000 people come to Cranfield each year to benefit from our executive and professional development programmes. An opportunity to keep up-to-date with the latest academic thinking and developments in your sector, engage with others in your industry and to stimulate thought to give you, your current and future employers that all important competitive advantage.

Find out more: www.cranfield.ac.uk/exec-courses

Photo taken prior to the Covid-19 pandemic

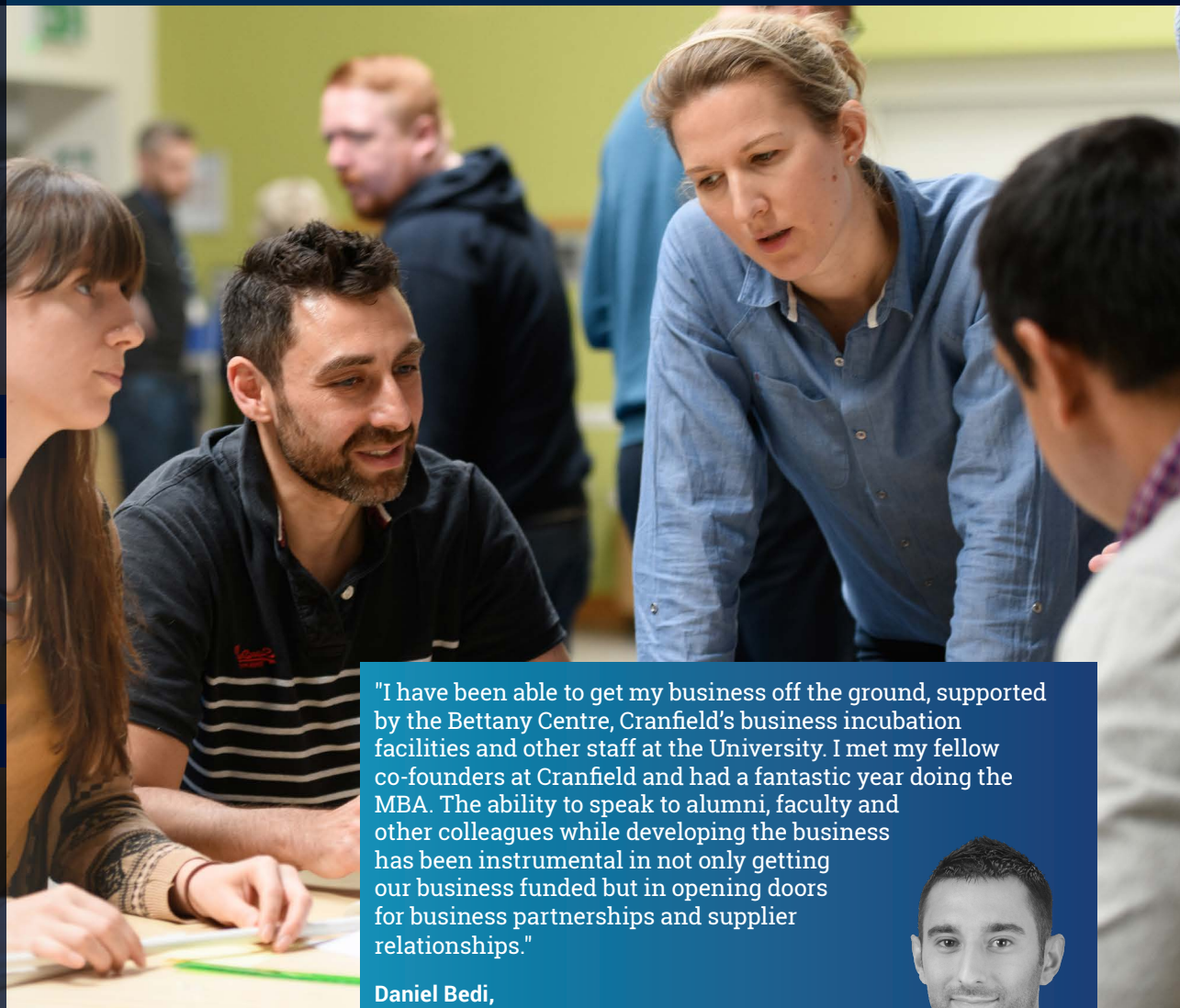
Our alumni:

A professional network of
67,000+
alumni from
169 countries

20+
international
alumni
communities

96%
of our graduates
are employed or
in further study

*DLHE longitudinal,
2017*



"I have been able to get my business off the ground, supported by the Bettany Centre, Cranfield's business incubation facilities and other staff at the University. I met my fellow co-founders at Cranfield and had a fantastic year doing the MBA. The ability to speak to alumni, faculty and other colleagues while developing the business has been instrumental in not only getting our business funded but in opening doors for business partnerships and supplier relationships."

Daniel Bedi,
CEO and Co-founder, Fan Insight Professionals,
(MBA 2017)





Academic life

Decide on your study route

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Flexible study

You can choose how you study at Cranfield.

Our full-time master's courses are designed to be completed in a year. Most full-time research degrees take three years.

However, it may suit you to study while you are working. Over half our master's and a third of our research students study part-time.

Course structure

Our courses are structured so that you don't need to live locally to study part-time. You will need to attend some modules in person and you can schedule your course structure around your commitments. These usually take the form of one-week blocks at varying times of the year, minimising the time you need to be away from your place of work and your family.

Multi-channel delivery

Blended learning opportunities include online materials, work-based projects, self-study, assessment by assignments and the latest tools for remote access to systems and information. Learn more at www.cranfield.ac.uk/online

Business relevant

Your project or research can be formulated around your workplace, so that you can access relevant expertise and apply the outcomes to your organisation. Some master's modules are taught together with full-time students, enabling you to network with people in your subject area and exposing you to global thinking.

Masterships®

Cranfield is leading the way with its portfolio of Level 7 Apprenticeships that incorporate a postgraduate qualification alongside the knowledge, skills and behaviours of Institute for Apprenticeships and Technical Education-approved apprenticeship standards. These part-time degree programmes provide opportunities for businesses to develop and retain their workforce and are funded through the Apprenticeship Levy. Our portfolio is evolving to incorporate qualifications across a wide range of subjects and specialisms so please do check our website for a full list of current opportunities to study for an apprenticeship qualification with Cranfield.

Find out more: www.cranfield.ac.uk/masterships

C4D building for Strategic Creativity on the Cranfield campus, where our Design Thinking course is based



C4D

Strategic Creativity

"I have learned a lot about myself while studying at Cranfield. The course is not only technically difficult but it is also very demanding. Learning how to cope with all the demands of my professional work, degree learning and I somehow managed to squeeze in getting married, between handing in my thesis, is what I am most proud of."

William Morris,
Engineer, Moog Aircraft Group,
(Computational Fluid Dynamics MSc 2019)



Master's: a different way of learning

Our specialist master's courses are designed in close collaboration with industrial advisory panels. This ensures course content is always industry-relevant and our graduates impress employers with their business readiness.

1:8
Teaching
staff to
student ratio

Higher Education
Statistics Agency
(HESA) 2018-2019

Our teaching staff to student ratio of 1:8 is one of the best of any university in the UK.

Many of our teaching staff come from industry and your master's is informed by their experience of carrying out research on behalf of the University's 1,500 industrial clients and partners across the globe.

Check your course web page for more information about opportunities such as:

- collaboration with industry partners and students on other courses,
- networking with industry-relevant guest speakers and internationally-recognised academic staff,
- accreditation from professional bodies,
- internships and international travel.

"The Cranfield group project is a really important thing that we look at, particularly through the interview process. We need graduates who are pragmatic, practical people, who have got a good strong academic background, but can solve problems and work together as a team, to deliver our missions."

Kathryn Graham,
Systems Engineering Manager,
Surrey Satellite Technology



Alumna presenting on campus at a networking event



Find out more: www.cranfield.ac.uk/study

If you enjoy doing original research and would like your degree to be more research-focused, look up our Master's by Research qualification:
www.cranfield.ac.uk/research

Cranfield master's course structure

This diagram illustrates the course structure of a lot of our full-time master's courses, though it is not indicative of all courses.

Please check your course structure online for more detailed information, including the weighting of each phase and part-time course structure variations.

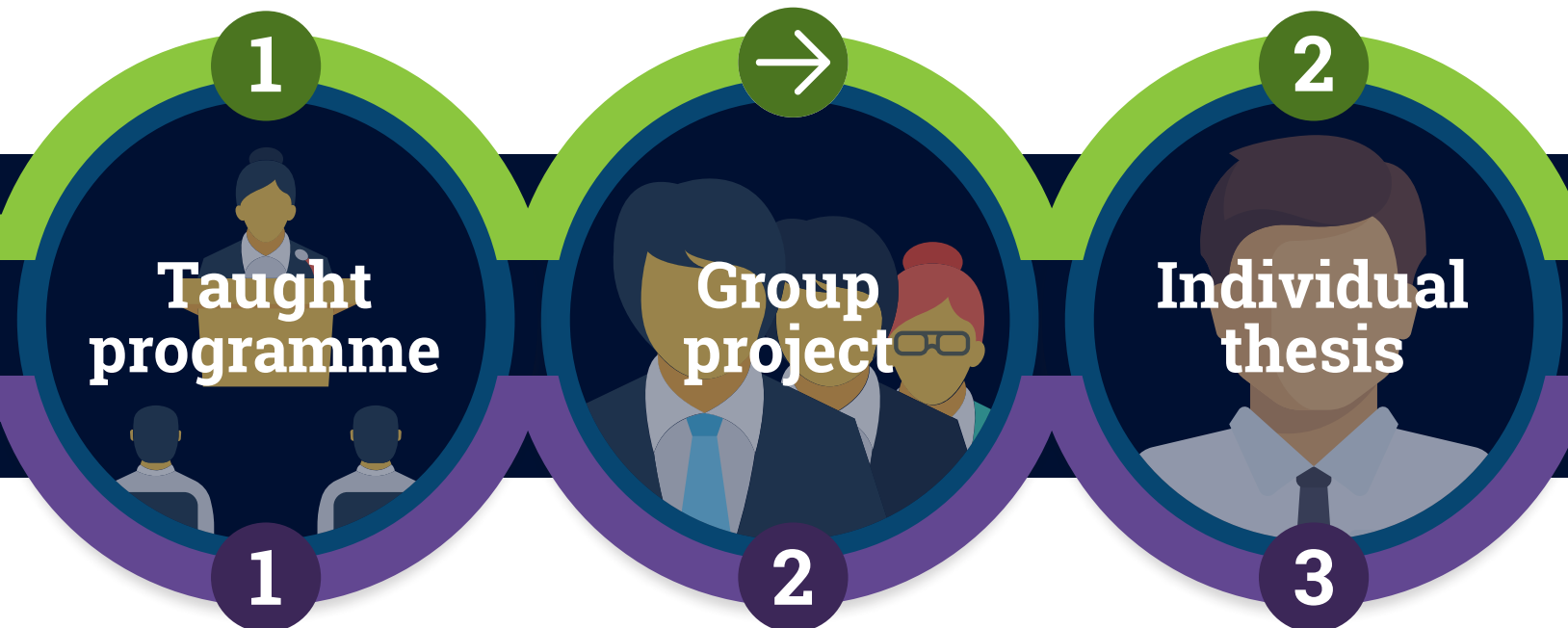
Taught programme: an intensive learning experience, providing you with the knowledge and skills you need to excel in your chosen specialist field.

Group project (not included in Defence and Security, some School of Management and several other courses): you will have the opportunity to address a real-world problem. The ability to understand how your part of a project affects the whole is a steep learning curve and this project gives our graduates a head start.

Individual thesis: an opportunity to think and work in an original way. This could be working on a project for a business partner, delving deeper into an area of specific interest or a real-world challenge in the sector you want to work in.

- Defence and Security
- School of Management

- Aerospace
- Energy and Power
- Environment and Agrifood
- Manufacturing
- Transport Systems
- Water



Group projects

We value the importance of giving you an opportunity to apply your learned skills into a real-world environment before you graduate.

Many of our courses offer the opportunity to have hands-on experience with a group project related to your MSc subject. Here is an example of one, with the viewpoint of the student, the sponsor and the academic.

Project title:

Analysis of the main components of cost of poor quality for medical devices manufacturing plant

The project aimed to identify sources of scrap for a high-volume injection moulding and assembly production line at BD Swindon.

BD Swindon is a global medical technology company that is advancing the world of health by improving medical discovery, diagnostics and the delivery of care.



The group project team (left to right): Audrey Fernandes, Duaa Alrufaihi, Juan Samuel Tirado Alvarez, Pauline Goldery, Daniel Vasquez Navarro, Rashmeet Kaur, Bhavya Jayuskh Gangar
(photo taken prior to the Covid-19 pandemic)



"Given the unprecedented situation created by Covid-19, our group project faced a plethora of challenges and constraints. Once restrictions of working on-site were applied, most of our group travelled back to their home countries. This meant working remotely and co-ordinating from three different time zones, which forced all our team members to adapt to a different working clock. The transition to remote working presented a lot of challenges, but the constant communication, support and check-ins offered by our project supervisors is what kept us going. Both our professor and our project co-ordinator from BD Swindon stayed in touch with us and gave us direction and encouragement to proceed further.

"The most important way in which Cranfield prepared me for real-life industry work is by teaching the lesson of finding stability in chaos around. With the right set of tools in my toolbox offered by the University, I was able to develop skills like resilience and agility to sustain myself even in tough business situations."

Rashmeet Kaur,
current student, (Engineering and Management of Manufacturing Systems Msc)

"We have worked with Cranfield University for several years now and the calibre of students we have seen has been of a very high standard.

"Our role as project sponsor is to help each student navigate the complex systems at BD, help to maintain efficiency and traction on each group or individual project we work on. This ranges from giving simple advice to arranging specialist meetings.

"Completing a group project with a company is important. It gives students the opportunity to understand the importance of working as a team in a workplace. Working in a real-life environment helps them to understand that not everything they've learned is as simple as expected."

Sean Ryan,
Operational Excellence Leader, BD Swindon

"The role of the supervisor is to challenge the students on their decisions. I ask them 'why?' in order to make sure that they have selected a methodology in a structured way. On one hand, we are pushing the students and on the other hand, when they do face problems, we try to support them by guiding them on where to find the answers to the problem that they're trying to solve.

"Having a group of MSc students running a project and managing to end up having a publication of this project is a huge achievement, so I'm really proud of my students."

Professor Konstantinos Salonitis,
Professor and Head of Sustainable Manufacturing Systems Centre



For other examples of group projects, please see page 33

Professional resources

Many of our on-campus, specialist research facilities are unique; from an operational airport to a wastewater treatment works.

Our comprehensive range of equipment provides you with unparalleled opportunities for your research and studies. Read about some of the specialist facilities in each area on pages 34 to 65.

**Over
£100 million**
of investment in new facilities
over the past four years

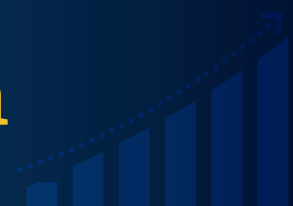


Photo taken prior to the Covid-19 pandemic

Take a virtual tour of our Shivenham and Cranfield sites to see inside some of our facilities:
virtualtour.cranfield.ac.uk

Library and IT

Our extensive and specialised libraries offer a vast array of sector-specific resources. Our information specialists will support you in accessing and using them, and respond quickly to requests for one-to-one help. Our aim is to ensure that, when you graduate, you are familiar with the resources widely used in your industry and have the soft skills required to stay informed of the latest developments in your sector. You can find out more at www.cranfield.ac.uk/library

Our IT services offer innovative online and on-campus real-time, interactive opportunities integral to your learning experience. These bring you closer to our state-of-the-art facilities when you are unable to be physically there. In addition to high-performance, commercially-relevant software such as CFX, Fluent and Matlab, you will also have access to specialist engineering applications to develop and test your own software. Learn more at www.cranfield.ac.uk/online and www.cranfield.ac.uk/itservices



Kings Norton Library at Cranfield campus
(designed by award-winning architect Sir Norman Foster)

"I feel really supported when I'm not at Cranfield campus. The library provides the majority of its books online, but can also post items to addresses within the UK. They also send out book chapters and journal articles electronically by email. Thanks to IT services, we can have meetings online and access all kinds of programmes, so I do feel very connected to the campus."

Kemi Eyeoyibo,
current student, (Management PhD)



Research: a world-class destination

Studying for a research degree offers you access to the facilities and expertise to pursue your ideas in your chosen field.

At Cranfield, we provide the framework to apply your work to make a real difference to society. With our emphasis on specialist sectors, our strong links with industry and government, and our collaboration with some of the other top universities in the UK such as Oxford, Cambridge, Imperial College London and Warwick, you will work with some of the brightest minds in their fields.

Research councils

Funding councils – under the umbrella organisation of UK Research and Innovation, which brings together seven different research councils, Innovate UK and Research England – have awarded Cranfield over £10 million in research grants in the past year alone.



UK Research
and Innovation

Doctoral centres

Doing your research degree through a funded doctoral centre provides you with the structure to help you network with research students working in your field at partner universities.

This enables you to benefit from expertise and facilities across the UK, and a supportive network of people at different stages of their research degrees who can give you advice and support. For more information on current opportunities, visit www.cranfield.ac.uk/dtc



centa.org.uk



[research.reading.ac.uk/
foodbiosystems](http://research.reading.ac.uk/foodbiosystems)



cdtwire.com



sww-ahdtp.ac.uk



waterwisercdt.ac.uk

For more information on current opportunities, visit:
www.cranfield.ac.uk/research/phd

Oil and gas engineering laboratory at Cranfield campus



"I think the most important thing is that I know the research I'm doing is needed by industry. A lot of the time with a research project you're solving a theoretical question, but we all know that our research is going to be used in industry once we've finished."

Jessica Taylor,
current student, Energy and Power EngD,
(Offshore and Ocean Technology MSc
2016)



Your doctoral research experience

As part of a specialist postgraduate community, research students at Cranfield work among like-minded professionals, benefiting from a wealth of multidisciplinary experiences.

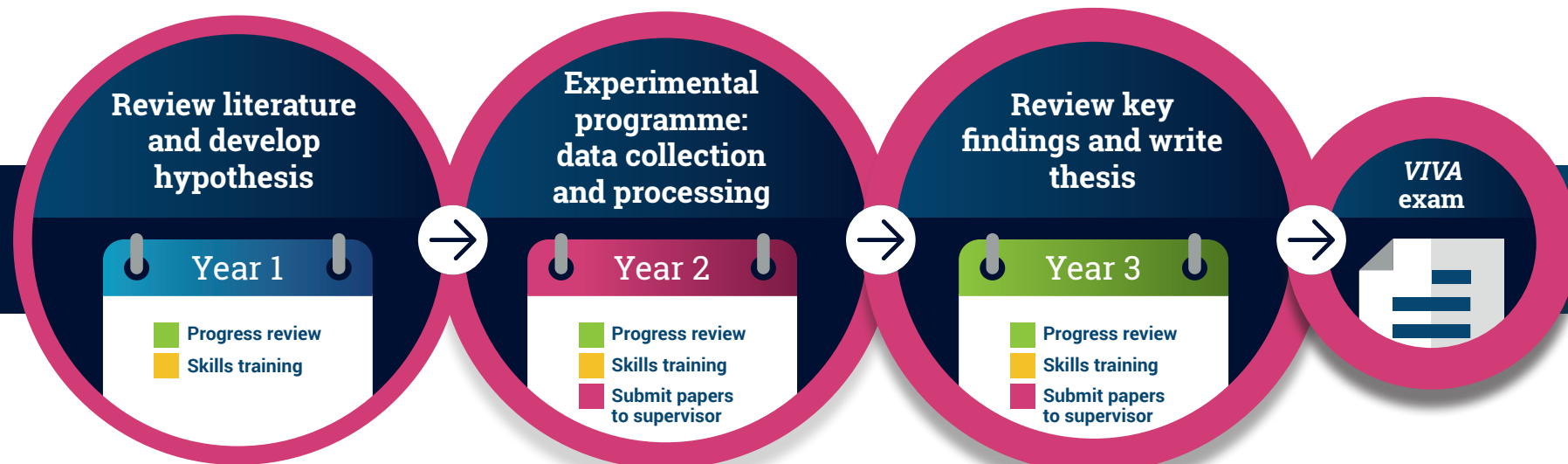
The Cranfield Doctoral Network

The Cranfield Doctoral Network comprises eight doctoral communities, which are aligned with the University's themes. These communities enable you to participate in a programme of events including seminars, lectures and other initiatives within each theme, including an annual conference where you will have the opportunity to showcase your research and network with your peers from across the University.

Transferable skills – Doctoral Researchers' Core Development programme

In addition to your academic studies, we provide a framework for your ongoing professional development through workshops, webinars and other resources. This enriching experience encompasses four key areas, highly valued by employers:

- ✓ Knowledge and intellectual abilities,
- ✓ Personal effectiveness,
- ✓ Research governance and organisation,
- ✓ Engagement, influence and impact.



The above diagram includes key elements involved in all research degrees. It is an example of a full-time PhD timeline. Other research degrees follow a slightly different structure and timeline.

For more information on these qualifications, visit:
www.cranfield.ac.uk/research

Research degrees and durations

| Qualification | Degree name | Duration | |
|-----------------|-----------------------------------|-----------|-----------|
| | | Full-time | Part-time |
| PhD | Doctor of Philosophy | 3 years | 6 years |
| DBA | Doctor of Business Administration | n/a | 4 years |
| EngD | Engineering Doctorate | 4 years | n/a |
| MPhil | Master of Philosophy | 2 years | 4 years |
| MSc by Research | Master of Science by Research | 1 year | 2 years |

What are the different research options?

There are several ways you can embark on a research programme at Cranfield, depending on your ambitions and circumstances. See the current opportunities at www.cranfield.ac.uk/research/phd

Employment-related research projects

If you or your employer have a challenge which you think could form your research project, we can support you to develop a solution while gaining a research qualification.

Benefits

- Opportunity to study in your own country while working.
- Opportunity to solve an actual problem in your workplace.
- Career development.

1

Funded research opportunities – studentships

We offer a range of pre-defined research projects that you can become involved with. These are funded opportunities, known as studentships, often in collaboration with industry and research councils. They offer a paid route – similar to a job in research.

Benefits

- Projects come with a fixed income (stipend).
- Pre-defined topic aligned with industry or government interests.
- Often involves multiple sponsors on a collaborative research project.

2

Individual research projects

If you have an area of research that you would like to explore further, we can help you develop your proposal.

Benefits

- Opportunity to explore and develop your own topic.
- Potential for funding.
- Structured programme with specialist support.

3



Kings Norton Library at Cranfield campus
(photo taken prior to the Covid-19 pandemic)



Introduction to our themes

**Our sector-facing research, facilities,
courses and experience**

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- 38 | Defence and Security
- 42 | Energy and Power
- 46 | Environment and Agrifood
- 50 | School of Management
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- 62 | Water

Finding the right postgraduate degree for you

Our courses and research programmes are informed and directed by industry's needs and challenges. To best address these challenges our specialisms are aligned to specific sectors, which we refer to as themes and are listed below. This enables us to build relationships with SMEs within these sectors as well as global businesses, governments, and NGOs.

Our courses are listed in the back of the prospectus by the below areas, as well as design thinking – which can be applied across all areas – helping you to identify which courses are informed by the industry and policy in the area you want to progress or move into:

- **Aerospace,**
- **Defence and Security,**
- **Energy and Power,**
- **Environment and Agrifood,**
- **School of Management,**
- **Manufacturing,**
- **Transport Systems,**
- **Water.**

Learn from your cohort

With approximately half of our learners over 30, we also accept students with relevant industry experience. This breadth of experience adds value to your learning at Cranfield. Mature students gain support from students with fresh experience of undergraduate study, and students who have not yet worked in their chosen sector benefit from real-world examples from mature students. This unique learning experience ensures our graduates are highly regarded and sought after in technology and management roles and organisations.

"My interest in Geographic Information Systems (GIS) stemmed from wanting to know more about the way geographical information is put together, and the uses of this within a defence capacity. My thesis was about processing aerial imagery and was sponsored by AWE. I chose Cranfield because there were over 200 in my year studying politics at undergraduate level, so I found the small class size here particularly valuable as I have no background in GIS."

Tally Bodnarec,
Portfolio Development Lead, Geospatial Commission,
(Geographic Information Management MSc 2017)



Applied research

Our academics and industry contacts can help you develop research that can be implemented by industry or governments. With our broad range of expertise, you can benefit from the opportunity to develop research and learning in one sector and apply it to another.

To give you an idea of the kind of projects you could be involved in, below are just some examples of master's and research project titles.

| Themes | Master's group and individual thesis projects | Research projects |
|---------------------------------|---|---|
| Aerospace | Using a conceptual design, develop a detailed design working in teams – structures, systems, and avionics | Nacelle design for ultra-high bypass ratio engines with CFD based optimisation |
| Defence and Security | Improving the post-mortem interval estimations of suspicious death investigations | Sub-surface radar imaging from space |
| Energy and Power | Modelling hot corrosion for specific gas turbine case studies (sponsored by Siemens Industrial Turbomachinery) | Development of a non-thermal atmospheric pressure plasma system for the reduction of water use in the cleaning of mirrors in concentrating solar power plants |
| Environment and Agrifood | The potential and limitations of UK commercial urban agriculture in supply chain management and business models | The application of digital soil mapping to improve the resolution of national soil properties across Great Britain |
| School of Management | Providing recommendations to operations challenges at Innocent Drinks UK | Responsible investment and role of professionals: an institutional work perspective |
| Manufacturing | New strategies for vaccine continuous production (sponsored by Public Health England) | Designing a circular business model from industrial by-products: a case study on paper mill sludge |
| Transport Systems | Driverless parking (sponsored by Connected Places Catapult) | Condition monitoring for aircraft environmental control systems |
| Water | Smart devices for water conservation (sponsored by Creative EC) | The impact of soils, weather and trees to water infrastructure failure |

To see examples of other research projects please visit:
www.cranfield.ac.uk/research/phd



"The group design project was the best part of the course. It was an out-of-this-world experience when we received appreciation for our project work from the who's who in the aerospace industry."

Anurag Anil Joshi,
Co-founder and Director of INDrone Aero Systems,
(Aerospace Vehicle Design MSc 2016)

Multipurpose freight aircraft designed as part of a student aerospace vehicle design project



**UK
No.1**

Over half of all aerospace engineering master's students in the UK study with us.

70+
specialisms

Our aerospace capabilities combine expertise in manufacturing and transport systems mirroring the real world.



Over three-quarters of our Aerospace learners come from outside the UK, representing over 60 nationalities.

| | |
|-----|----------|
| 17% | UK |
| 40% | EU |
| 43% | Overseas |

(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

The relationship between aviation and the environment is one of the key challenges facing developed societies. With specialist facilities and key academics who work jointly across aviation and the environment, Cranfield is uniquely placed to prepare you for a career in the ever-evolving aerospace sector.

Research in action

Student challenge to counter threat from UAV swarms



BAE Systems sponsored a multi-university swarm competition at Cranfield. The teams had to answer a scenario based on the real and emerging threats that exist to protect urban spaces, airfields and airports from such incidents. Increasingly capable, UAV's are becoming more affordable and easy to source, so there is a need to counter these systems in a robust and affordable manner using innovative solutions.

The students used a combination of technologies including artificial intelligence (AI) and automation, together with innovative thinking and close co-operation between UAVs to autonomously detect, intercept and neutralise hostile drones.

"With autonomy and AI being a vital part of what we do, this challenge offered the perfect blend of exploring the art of the possible while testing the students' abilities in this important field."

Professor Nick Colosimo,
Principal Technologist at BAE Systems

Find out more: www.cranfield.ac.uk/aerospace

Investing in innovative facilities

Cranfield is the only university in Europe with its own fully-operational airport, aircraft and air navigation service provider on campus. This global research airport, a national asset for the UK, features extensive facilities including wind tunnels and avionics laboratories. In addition, we continue to invest in our aerospace facilities to ensure we add the value you need:

- **Aerospace Integration Research Centre (AIRC):** the AIRC houses physical and virtual simulation labs including development of a virtual wind tunnel and an aircraft flight simulator to assess the impact of new ideas on aircraft.
- **Air traffic management laboratory:** with an integrated airport control tower simulator and high-fidelity flight simulators, we can investigate the impact of the different air traffic management agents on airspace users.
- **UAV laboratory:** used for flight testing in the areas of guidance, navigation, control and surveillance.
- **Gas turbine engineering laboratories:** equipped with a 2MW compressed air plant and regenerative air heater, giving the capacity of providing clean air at high pressure, temperature and flow.
- **Delta High Performance Computer:** an academic supercomputer for scientific, data analytic and machine learning applications, predictive modelling and simulation tasks. Supporting 250-300 users, it reduces the time taken to perform complex research by carrying out calculations across many processors simultaneously.

Richard Whittle, winner of the Lord Kings Norton prize 2018, with his concept for a portable hyperbaric chamber for use in space





"The future is ever more complex, uncertain and fast-paced. Preparing our Defence Academy graduates for this reality is our greatest – and most important – endeavour. Cranfield Defence and Security continues to play an innovative and far-sighted role in achieving this objective. Defence and Security's deep expertise and reputation are key to ensuring the postgraduate education required of UK defence is world-leading."

Major General Andrew Roe,
Chief Executive, Defence Academy
and Commandant, Joint Services
Command and Staff College

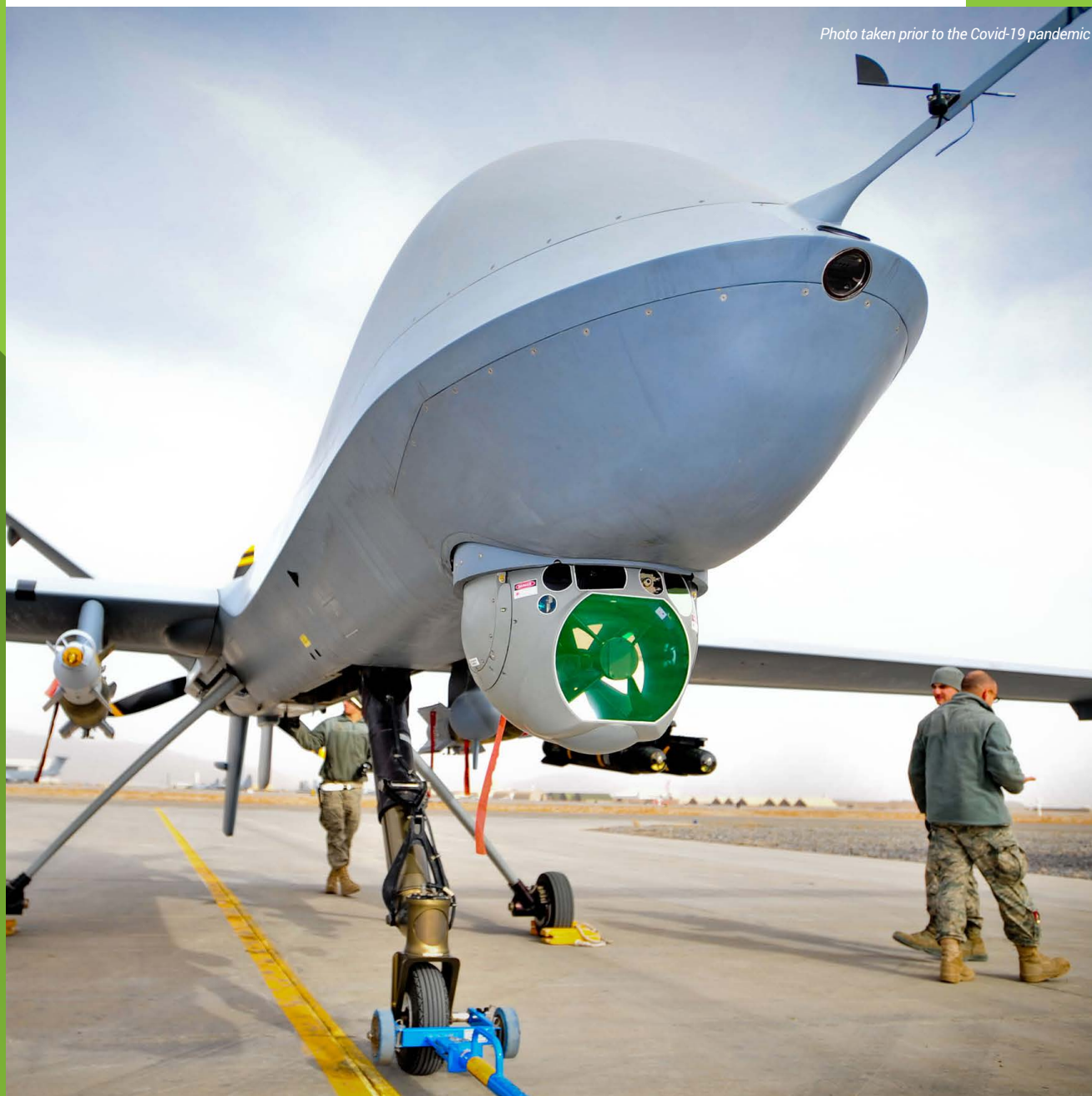


Photo taken prior to the Covid-19 pandemic

70%

Over 70% of our defence learners are serving military officers and civil servants.

3,000+



Over 3,000 delegates and exhibitors, representing more than 700 companies, academic institutions and government agencies attend our symposia annually.

70+

Students from more than 70 countries have studied Defence and Security with us.

THINKING, BRILLIANTLY APPLIED

Cranfield is one of the world's leading universities for defence and security education, research and consultancy. Our academics' expertise ranges from energetics and forensic sciences to international stabilisation and cyber security.

Research in action

Developing chemical tools to combat the trafficking of illegal substances



We are part of CRIM-TRACK, a multi-agency project to develop a simple, portable detector – a mechanical sniffer dog – to identify illegal drugs and homemade explosives.

The trafficking of illegal drugs and other banned substances has extremely negative social and economic impacts. Law enforcement agencies (LEAs) are under increased pressure to crack down on drug trafficking, smuggling and terrorist activity. The development of low-cost, flexible tools to detect drugs, the precursors of drugs, home-made bombs and other harmful chemicals will give LEAs a better chance of detecting illegal compounds as they move around the European Union.

The project has developed tools that are able to successfully detect all the required compounds. We can detect minute quantities of drugs and explosives, as well as the precursors of these compounds. The prototypes developed are easy to use and employ disposable sensing chips, creating a fast, cost-effective and sensitive detection unit.

Find out more: www.cranfield.ac.uk/defenceandsecurity

World-class, state-of-the-art facilities

Several unique facilities and large-scale test environments, including those on the Ministry of Defence site at Shrivenham, are used by our students and clients for exceptional research. They include:

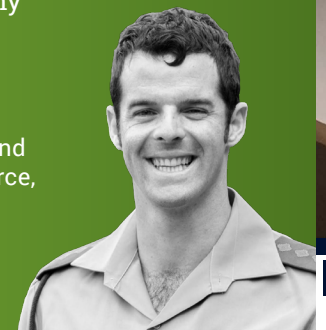
- Laboratories and facilities allowing **investigation and design of radar systems and waveforms; communication networks and devices; autonomous platforms and intelligent systems.**
- **Cranfield Ordnance Test and Evaluation Centre (COTEC):** where materials and weapons are tested and evaluated for governments' agencies, defence suppliers and manufacturers.
- A £3.5 million investment in forensic facilities including a **virtual reality autopsy table, crime scene investigation rooms** and a **simulated mass grave excavation site** at our Bedfordshire campus.

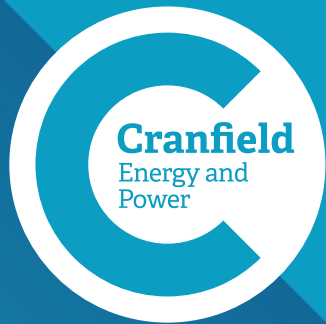


Simulation centre at Shrivenham
(photo taken prior to the Covid-19 pandemic)

"Being a more mature student at postgraduate level helped me a lot. I was sponsored by my current workplace. The course has led me to work in a complex programme where the Australian Army is designing a new armoured car in conjunction with Thales Australia."

Matthew Hume,
Systems Engineer, Capability Acquisition and Sustainment Group, Australian Defence Force, (Military Electronic Systems Engineering MSc 2018)





"I would say to a future student, study in energy and power and not to hesitate because obviously climate change is a huge issue that everybody is looking into at the moment. There's something for everybody in the energy sector."

Beth Hall,
Project Manager, Siemens,
(Materials for Energy Systems
MSc 2018)

**UK
No.3**

Cranfield is the third largest higher education provider for energy and power postgraduates.
Higher Education Statistics Agency, 2018-2019

1 million
kilowatt hours
per year
solar-powered

Cranfield's solar power farm is a working research facility, it provides 5% of the annual electricity on campus.



Over three-quarters of our Energy and Power learners come from outside the UK, representing over 40 nationalities.

| | |
|-----|----------|
| 20% | UK |
| 21% | EU |
| 59% | Overseas |

(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

The way the world powers itself has to change fundamentally. Cranfield is leading the transition from fossil fuels to renewable sources, working across the global energy system, developing new solutions and teaching the next generation of energy professionals. We are the natural home of Net Zero – study with us and get the skills to play your part.

Research in action

Delivering cleaner, cheaper energy



Cranfield is working in partnership with SSE Enterprise, Element Energy, Smarter Grid Solutions and Sweco UK on a design project for Peterborough City Council to transform the generation and distribution of energy in the city.

Peterborough Integrated Renewables Infrastructure project (PIRI) aims to deliver a significant drop in CO₂ emissions by 2030, while cutting energy bills by up to a quarter.

A next-generation heat network, electricity network and electric vehicle infrastructure is all incorporated into one smart holistic scheme. If successful, the scheme could be rolled out to other cities and towns, to help the UK realise its ambitions of net zero by 2050.

Find out more: www.cranfield.ac.uk/energyandpower

Facilities

Energy and Power has a range of world-class and unique industrial facilities that students can use as part of their studies and research. These include:

- **The energy process laboratory:** equipped with pilot-scale facilities to study the clean energy conversion in fossil and biofuels and study different CO₂ capture techniques.
- **The process systems engineering laboratory:** equipped with industrial-scale single-phase and multi-phase flow facilities to study the behaviour of complex flows found in oil and gas and also home to a 30m wave tank facility used to research marine structural concepts and behaviours.
- **Our structural integrity laboratory:** one of the best equipped facilities in the UK for the development and testing of large-scale structural materials and components used in the energy sector.

1MW Solar PV farm on Cranfield campus



"I would personally highlight that every single one of my soft skills was tested during the course and helped me stand out from other graduates my age. My group project was for BP, and I particularly enjoyed the practical approach the course has, with real-life examples and use of the facilities. It is easier to understand the theory when you complement it with an example of an existing facility."

Jorge Martinez Romero,
Project Engineer, Amazon,
(Process Systems Engineering MSc 2013)





“One thing I’m really proud of is that the outcome of my PhD has resulted in a collaborative partnership that’s supporting over 7,000 small-holder farmers in Northern Madagascar. My PhD was sponsored by Unilever, and I worked directly with them to maximise the business impact my PhD could have. As a result, I joined them full-time after finishing my studies.”

Dr Siobhan Gardiner,
Climate Change and Environment
Lead, Deloitte,
Global Sustainable Technology
Senior Manager, Unilever (2017-2019),
(Environment and Agrifood PhD 2017)



The new Agri-Informatics building was awarded best education building in the Local Building Authority (LABC) central region 2020 awards.



Our World Soil Survey Archive and Catalogue, (WOSSAC) covers 360 territories worldwide.



Just under two-thirds of our Environment and Agrifood learners come from outside the UK, representing over 35 countries.



(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

For more than 50 years, we have contributed to enhancing natural capital and ensuring that global food systems are more resilient for the future.

Research in action

Boosting rice production in Africa



Our researchers are leading a UK Government funded project to overcome a soil health problem affecting rice production in large parts of Africa.

Rice is a major staple food across sub-Saharan Africa and demand is rapidly increasing due to urbanisation and changes in consumer preferences.

Iron toxicity is a soil disorder that can reduce rice yields by up to 90%.

The research will examine the traits that allow indigenous African rice varieties to tolerate the toxicity. It will map areas where new rice varieties, and improved crop management to tackle iron toxicity, will be most beneficial.

Investing in innovative facilities:

Just a few of the facilities available to students and clients to conduct their research at scale are:

- **LandIS, the Land Information System**, is a substantial environmental information system operated by Cranfield, and recognised by Defra as being the definitive source of national soils information. It contains soil and soil-related information for England and Wales including spatial mapping of soils at a variety of scales, as well as corresponding soil property and agro-climatological data.
- **Cranfield Urban Observatory**: the entire Cranfield campus is a living laboratory – a testbed for transformative technologies to deliver enhanced social, economic and environmental outcomes in urban infrastructures. Our own airport, solar farm, water treatment facility and road testing environment are just some of the capabilities linking the campus-wide network of sensors measuring the air, water, soil and wildlife.
- **The Centre for Environmental and Agricultural Informatics**: two new £3 million buildings for agri-informatics, atmospheric research and land-use observation systems. This is complemented by FAAM, which is the UK National Environment Research Council's facility for operating the BAE-146 atmospheric research aircraft, the largest of its type in Europe, and which operates from the Cranfield campus.
- **Plant science laboratory**: one of the largest and best equipped postharvest laboratories including cold rooms, testing facilities and fully-equipped, large-scale glasshouses.

Plant science laboratory at Cranfield campus



"We share what we learn from industry with Cranfield, to create the syllabus that fits the students' needs for the future."

Professor Bizhan Pourkomailian,
Director Global Food Safety, Restaurant and
Distribution, McDonald's Restaurants Limited



Find out more: www.cranfield.ac.uk/environmentandagrifood



"From my experience in business and my academic research, I know how important it is to manage the social and environmental impact of a business. Integrating sustainability into business strategy not only offers challenges but opportunities. This is true now more than ever as businesses must play their part in halving carbon emissions in the next decade, as well as dealing with the implications of Covid-19."

Dr Rosina Watson,
Senior Lecturer in Sustainability



Flagship MBA is ranked second in Europe for the learning experience, seventh in Europe for networking.
Bloomberg Businessweek European Best B-Schools ranking of full-time MBA programmes 2019-20



Ranked top in the world for breadth of alumni network.
The Economist Which MBA? Rankings 2019



Over a quarter of our School of Management learners come from outside the UK, representing over 75 countries.



(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

As a world leader in management education and research for over 50 years, we are uniquely placed to connect leadership with technology. We develop knowledge and expertise to improve the practice of management.

We are one of an elite group of schools worldwide to hold triple accreditation.



Research in action

Understanding the future workforce



Photo taken prior to the Covid-19 pandemic

Societal trends such as emerging technologies, the economic cycle, increased diversity, Brexit and, most recently, the Covid-19 pandemic, will undoubtedly lead to changes to the world of work. These changes will, in turn, influence the attitudes, preferences and expectations of the future workforce.

Sponsored by the Defence Science and Technology Laboratory (Dstl), via the Human and Social Science Research Capability (HSSRC), Cranfield is working with the Institute for Employment Studies (IES), QinetiQ, Aleph Insights and 100%Open to identify how the nature of work, the workplace and the workforce is likely to change between now and 2035.

Our previous research for Dstl found technology, family structures, education and diversity had a bearing on drivers of preferences for types of feedback, developing transferable skills and undertaking meaningful work. We will build on this to provide thought leadership relating to recruiting, engaging, managing and retaining the workforce.

Find out more: www.cranfield.ac.uk/som

Highly interactive and engaging learning opportunities

To support your programmes we have assembled a team of digital education experts who operate at the intersection of technology and education, collaborating with academics to create engaging online programmes. These programmes feature the interaction and participation of traditional on-campus education, combined with the benefits offered by the latest virtual technologies.

Most of our online teaching is delivered in real time, meaning you will be able to engage instantly with academics and work collaboratively with other students.

The range of activities on offer include real-time lectures, role play opportunities, business games, immersive learning experiences, team activities and social and networking opportunities.



"I believe that the additional value I added to the business through my Cranfield experience was probably a significant consideration for my appointment as the Director of Finance. I am able to demonstrate a holistic, strategic and analytic focus and contribution to the business."

Bimpe Olaleye,
CFO/Finance Director, ipNX Nigeria Limited,
(Finance and Management MSc 2006)





“Switching to sustainable alternatives is an imperative but needs to be done in a clear-headed way, informed by a full knowledge of implications. This is nowhere more important than in manufacturing, the global machinery for transmuting natural resources into what’s useful, what’s needed.”

Professor Richard Herrington,
Head of Earth Sciences,
Natural History Museum,
Guest speaker at Cranfield’s National
Manufacturing Debate 2019

... [blogs.cranfield.ac.uk/
manufacturing/2075](https://blogs.cranfield.ac.uk/manufacturing/2075)



**for production and
manufacturing
engineering PhDs.**
*Higher Education
Statistics Agency,
2018-2019*



**for engineering
(Mechanical,
aeronautical and
manufacturing).**
*QS World University
Rankings by subject
2020*



Over half of our
Manufacturing learners
come from outside the
UK, representing over
50 countries.

| | |
|-----|----------|
| 48% | UK |
| 17% | EU |
| 35% | Overseas |

(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

We are working towards a sustainable manufacturing sector through fundamental science and thought leadership for manufacturing solutions across all sectors. We provide insight into current industry challenges in fields as diverse as graphene technologies, metal additive manufacturing and life cycle analysis.

Research in action

Making examination and surgical glove manufacture fit for a greener future



Meditech Gloves factory

Meditech Gloves, one of the leading manufacturers of high-quality examination and surgical gloves, sponsored Cranfield's manufacturing group project in February 2020 and two PhD students, with the brief to revolutionise the way it produces its gloves.

During the Covid-19 pandemic, Meditech Gloves increased its production of gloves substantially and is looking to scale-up further.

Rubber is the future for sustainable glove manufacture and Meditech Gloves is committed to have its gloves fully degradable and free of allergens.

Meditech Gloves is aiming to become the most sustainable and most efficient producer of rubber gloves and Cranfield is supporting them in this aim by reviewing the glove production process, energy usage and wastage of the rubber latex used in production.

Cranfield is also looking into the possibility of using nitrile in place of latex in examination gloves to achieve the same biodegradability.

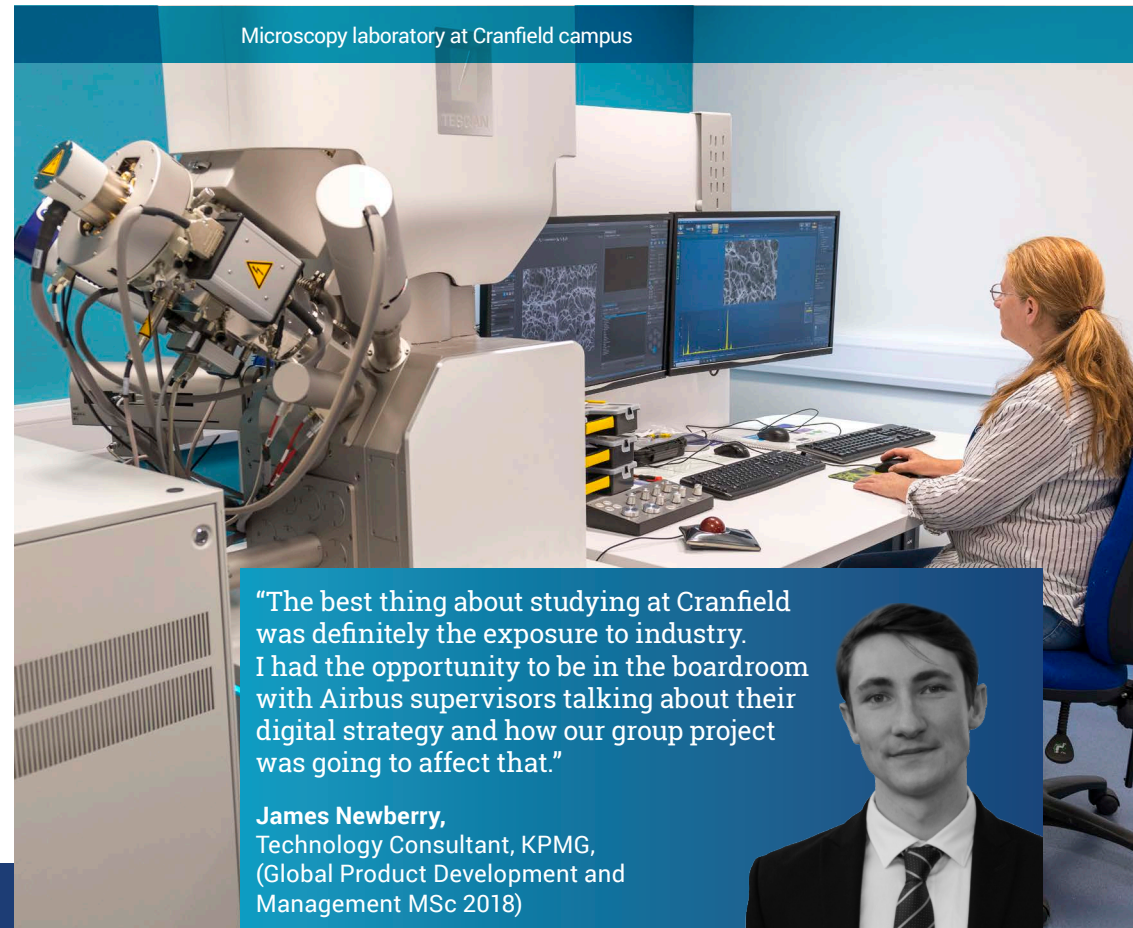
Find out more: www.cranfield.ac.uk/manufacturing

Facilities

Our world-class facilities include:

- **Composites manufacturing:** a full range of composite manufacturing including novel 3D techniques and reinforcement using sustainable natural fibres.
- **Welding Engineering and Laser Processing:** one of the most extensive large-scale metal additive manufacturing facilities in the world with a variety of state-of-the-art laser processing equipment.
- **Materials characterisation suite:** students receive hands-on experience with a range of sophisticated techniques including electron and field ion microscopy.
- **Smart manufacturing:** we provide the capability to model and simulate manufacturing processes and whole factories including human behaviours.
- **Specialist coatings:** we are home to the National High Temperature Surface Engineering Centre and have multi-source coating machinery for the rapid prototyping of novel alloys.
- **Nanomaterials laboratories:** for the development and application of nanomaterials, including manufacturing of carbon nanotubes, graphene and other 2D materials.

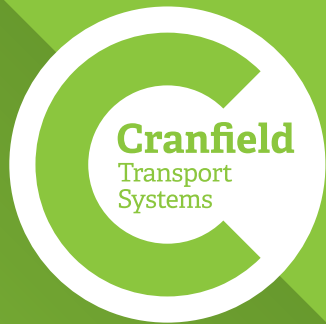
Microscopy laboratory at Cranfield campus



"The best thing about studying at Cranfield was definitely the exposure to industry. I had the opportunity to be in the boardroom with Airbus supervisors talking about their digital strategy and how our group project was going to affect that."

James Newberry,
Technology Consultant, KPMG,
(Global Product Development and
Management MSc 2018)





"The partnerships and the fact that Cranfield is very tight knit with industry separates it from the crowd."

Mike Evans,
Senior Vice President,
Customer Experience, Brand
Communications, Flydubai,
(Air Transport Management MSc
1997 and Executive MBA 2006)



**UK
No.1**

We have the largest
number of transport
and automotive
postgraduates of any
university in the UK.
*Higher Education
Statistics Agency,
2018-2019*

25%

25% of automotive
engineering master's
students in the UK
study at Cranfield each
year.
*Higher Education
Statistics Agency
2018-2019*



Over three quarters
of our Transport
Systems learners come
from outside the UK,
representing over 65
countries.

16% UK
35% EU
49% Overseas

(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

With over 50 years' experience, our teaching and research expertise covers technology, engineering and management across all modes of transport, including sustainable transport and intelligent mobility.

Research in action

Improving accessibility with our virtual airport



Ensuring the transport network is accessible to all passengers is a key priority for Governments and transport providers.

Cranfield, in partnership with Theia Immersive, has developed a virtual airport, one of the first of its kind, that will be used to conduct research as part of the passenger experience laboratory. The virtual airport will enable researchers to study and improve the air travel experience for passengers with additional mobility needs.

The 3D environment can be configured to replicate different design layouts, ambient conditions and levels of activity within a bespoke or simulated real-world airport.

Find out more: www.cranfield.ac.uk/transportsystems

Facilities for research and teaching

We operate a range of unique 'at-scale' facilities including the:

- **Digital Aviation Research and Technology Centre:** part of a £67 million project which includes a digital air traffic control centre; passenger experience laboratory; maintenance, repair and overhaul laboratory; Boeing 737 ground demonstrator aircraft; and air traffic management laboratory.
- **National Flying Laboratory Centre:** our award-winning flying classrooms and laboratories offer an amazing learning experience and support innovative research.
- **Advanced Vehicle Engineering Centre:** which includes an off-road vehicle dynamics facility; instrumented autonomous vehicle test track; vehicle workshops; and electrification, autonomy, simulation, mechatronics and control systems laboratories.
- **Cranfield Impact Centre:** one of just two FIA (Fédération Internationale de L'Automotion) approved test centres in the world, crash testing Formula One cars.
- **Accident investigation laboratory:** a unique hands-on teaching facility for working with wreckage and evidence from rail, marine and aircraft accidents.
- **Engineering photonics and integrated vehicle health management laboratories** for the development and use of advanced sensor technologies.

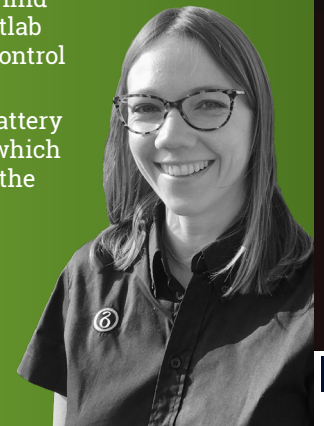
Eye-tracking research in the Cranfield flight simulator



"My Cranfield degree definitely helped me find a job in the UK. The projects we did on Matlab and Simulink help me when working on control systems.

"The course was good, as it looks at new battery electric and hybrid vehicle technologies, which is important knowledge when working in the automotive industry at the moment."

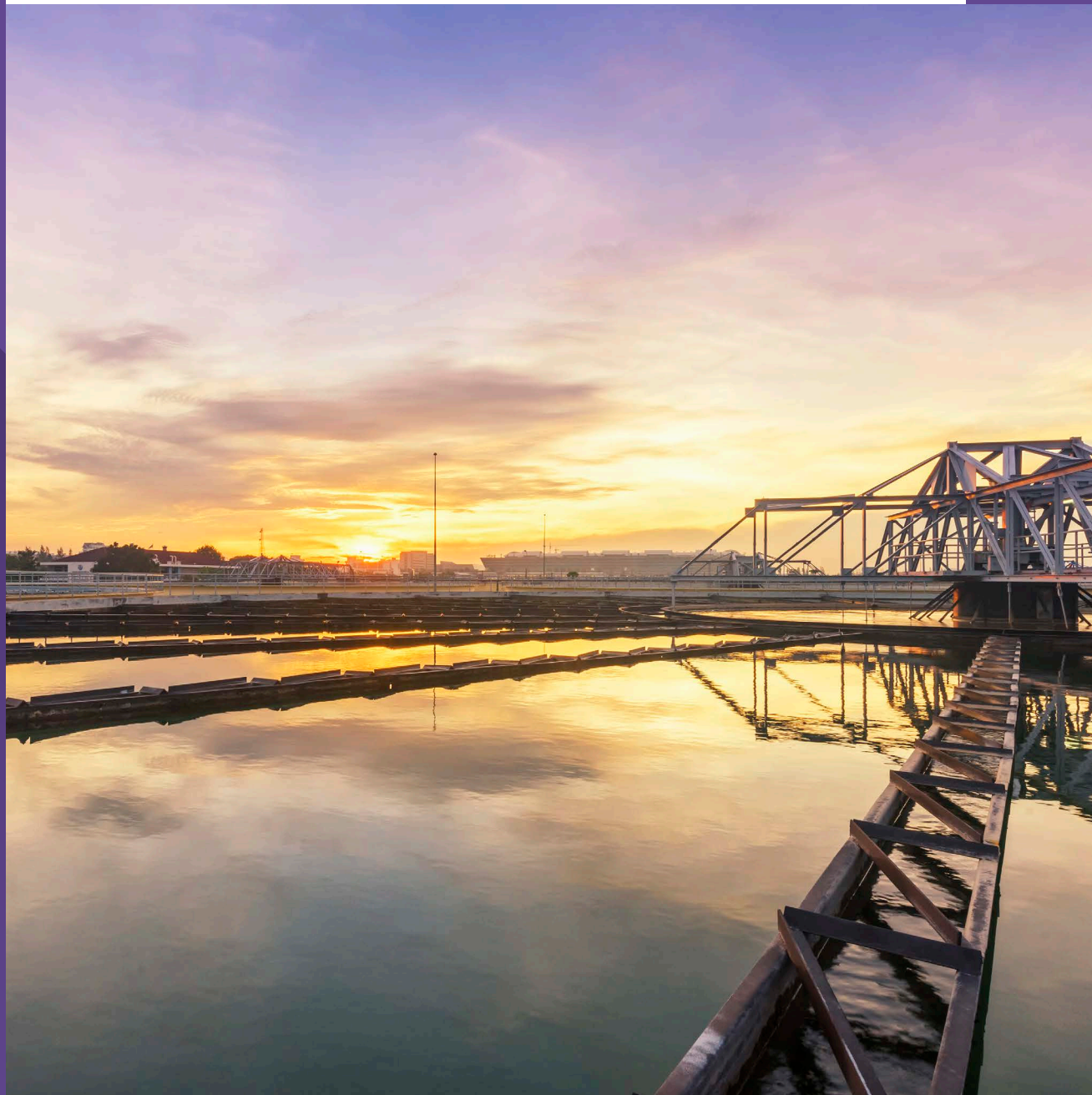
Pauline Dumont,
Development and Integration Engineer,
Delta Motorsport,
(Automotive Mechatronics MSc 2015)





"Cranfield is one of those leaders in the water sector – you keep bumping into people who have studied there. I'm a consultant working with a number of different clients including the Swiss Government, UNICEF and the World Bank, advising on water and sanitation. The way I work has been heavily influenced by the course I did at Cranfield. There was a strong emphasis on working within a team of professionals to achieve a solution, it was very multicultural, and that's very much how I work today."

Sean Furey,
Director Rural Water Supply Network (RWSN), (Community Water Supply Network MSc 1998, now called Water and Sanitation for Development)



New facilities

New National Water and Wastewater Treatment Test Facility and water science laboratories.



Leading some of the UK's top universities to deliver inspirational training and research for a resilient water future.



Over half of our Water learners come from outside the UK, representing over 28 countries.



(Figures from February 2020)

THINKING, BRILLIANTLY APPLIED

We are solutions-focused and our innovative research and applied postgraduate expertise in water treatment and management are making water services and natural water sources more resilient and sustainable.

Research in action

Reinventing the toilet – helping to solve sanitation issues in low-income countries



The National Water and Wastewater Treatment Test Facility at Cranfield campus

Our solution to the Bill and Melinda Gates Reinvent the Toilet Challenge uses nanotechnology to convert human waste to water and ash. Named by the *Financial Times* as one of the '50 ideas to change the world' in 2017, it has also been recognised by the International Water Association's 2018 World Water Congress, winning gold in the Breakthroughs in R&D category as well as the Kiran and Pallavi Patel Grand Innovation Award. A multidisciplinary research project, showing how shared challenges are best tackled through collaboration – in this instance, between our water, energy and power and design academics and PhD students.

Find out more: www.cranfield.ac.uk/water

£9.5 million invested in water treatment and infrastructure test facilities

As part of a major national consortium, the UK Collaboratorium for Research in Infrastructure and Cities (UKCRIC), we have enhanced and extended existing on-site industrial-scale water and wastewater test facilities, used by both master's and research students. Research from this collaboration will inform government and industry investment in the UK's infrastructure.

Investments include:

- **a sensor testing facility** for exploring engineering resilience of urban water systems,
- **an infrastructure breakthrough innovation hub** with areas for design, rapid prototyping, and testing,
- **a data visualisation suite,**
- several newly-built laboratories and Cranfield is home to the new **National Research Facility for Water and Wastewater Treatment,**
- **sewer loops** for analysing the formation and control of fats, oils and greases (FOG) in sewers.



"I chose to pursue a career in water and wastewater engineering due to the wide range of opportunities available in this sector, with the potential to work anywhere in the world.

"Cranfield Water Science Institute has strong links with the water and wastewater industry. Since graduating I have sponsored master's projects, presented on the taught master's programme, attended careers fairs and collaborated with Cranfield academics on research papers."

Dr Emma Sharp,
Area Operations Business Lead, Severn Trent,
(Water Pollution Control Technology Programme
MSc 2002 and Water PhD 2005)





The Woodland Trail on Cranfield campus

Your time at Cranfield

**Discover the surrounding area and
everything Cranfield has to offer**

- 68 | Life at Cranfield University
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- 74 | On-campus accommodation at Cranfield
- 80 | Living in Cranfield village
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- 84 | Living in Bedford

Life at Cranfield University

Our close-knit community provides a safe and tranquil environment to study and socialise with skilled and ambitious people.

Teaching and facilities for Aerospace, Energy and Power, Environment and Agrifood, Manufacturing, Transport Systems, Water and the School of Management are located on the Cranfield campus in Bedfordshire, in South East England.

As a student, you and your family will be part of this warm, welcoming community. With over 100 nationalities represented on our campus, we are committed to diversity and inclusion, and aim to provide a supportive learning environment, where everyone is treated with dignity and respect.

Cranfield campus is set in extensive grounds with:



Accommodation options for all



Various places of worship with multi-faith rooms



Variety of places to eat and drink



Educational facilities for students with younger children



Sports and leisure facilities



Our Technology Park with entrepreneurial businesses

"As a Muslim, I was so glad to find a mosque in Cranfield to pray, which made me feel comfortable and proved that Cranfield takes care of everyone from different cultures."

Sadeq Almeaibed,
(Engineering and Management of Manufacturing Systems MSc 2019)



Take a virtual tour of our campus:
virtualtour.cranfield.ac.uk

Student Advice Centre

We value our diverse student community and provide support to help you achieve your full potential during your time with us.

The Student Advice Centre offers a professional and confidential service where information, advice and guidance are available to all students on a broad range of issues, from information for those with families about local schools, to help with any concerns affecting your study progress and wellbeing.

Learning Support Officers form part of the Student Advice Centre and act as the central point of contact to provide information and guidance for disabled students and those with learning support needs, including dyslexia and mental health needs.

Student advice and support:
www.cranfield.ac.uk/wellbeing

Families:
Cranfield: www.cranfield.ac.uk/cranfieldfamily
Shrivenham: www.cranfield.ac.uk/shrivenhamfamily

Our Shrivenham campus

Cranfield Defence and Security is primarily located at the Defence Academy of the United Kingdom at Shrivenham, near Swindon in Oxfordshire, where the UK Ministry of Defence offers postgraduate education and training to the country's Armed Forces and defence civil servants.

Shrivenham facilities include:



Variety of places to eat and drink



Access to the Officers' Mess at a small charge with activity rooms and quiet areas to study



Sports and leisure facilities included in the Athletics Union membership



Various places of worship with multi-faith rooms

Find out more about our Shrivenham campus:
www.cranfield.ac.uk/study/life-on-campus/life-at-shrivenham

Get involved on campus

Being among like-minded professionals, you will make many lifelong, international friends when you come to Cranfield.

Supporting you to achieve your potential is at the heart of our commitment to you. We encourage you to participate in many ways in addition to your studies, and to embrace and cherish our values:

Ambition – We aim high. We do all we can to achieve excellence.

Impact – We change people's lives. We make the world a better place.

Respect – We value everyone's expertise. We support each other.

Community – We build and cherish our Cranfield community. We embrace diversity.

Sport and societies

There are plenty of opportunities for you to participate in a wide variety of sports, clubs, societies and events. And if not on campus, there are many activities in nearby towns.

Student Ambassadors

There are also opportunities to become involved as a 'Student Ambassador' and have a say about your student experience, as well as liaising with future students to share your knowledge about studying at Cranfield.

An excellent way to meet people, feel part of a community and just relax, Cranfield offers something for everyone.



Photo taken prior to the Covid-19 pandemic

Find out more: www.cranfield.ac.uk/lifeoncampus

Cranfield Students' Association

As a student of Cranfield University, you are automatically a member of Cranfield Students' Association (CSA), a student-led, democratic organisation that operates at both Cranfield and Shrivenham. The CSA is here to represent and support students, and to enhance your student experience in many ways.

CSA representatives sit on almost all University committees, providing a student voice throughout the University. It provides advice and support, and can signpost students to specialised services if required. The CSA runs a wide range of activities and entertainment, day trips, sports clubs and social societies. Many of these are run by students, providing opportunities for personal development and experience.

For more information visit www.mycsa.org.uk



Student charter

Our charter sets out how the University, our students and the Cranfield Students' Association work together to enable you to get the most out of your Cranfield experience.

For more information visit www.cranfield.ac.uk/studentcharter



"The family-like atmosphere at Cranfield was the aspect I most enjoyed. We all lived on, or close to, campus and we developed into a very close-knit group. Unlike at undergraduate level where the class sizes often run into the hundreds, we all knew each other personally and developed very close friendships."

Colm Daly,
Trainee Credit Officer, DVB's Aviation, (Air Transport Management MSc 2016)

Living on and around Cranfield campus

Finding the right accommodation is essential in helping you settle in and enjoy your time at Cranfield. There are a wide range of accommodation options available both on and off-campus.

Our on-campus accommodation ranges from halls of residence to shared houses suitable for individuals, couples and families, most of which are just a few minutes' walk from lecture rooms and other campus facilities.

If you would prefer to live off-campus in the surrounding areas, you will find many different property types such as studios and shared houses in nearby Cranfield village, Milton Keynes or Bedford so there are plenty of options to choose from. There is more information on these places in the following pages.

Things to consider are the lifestyle you want to follow, the local transport options or whether you have a car and want to drive, and whether you prefer to stay alone or in a group. Your study at Cranfield is intense, so having the right accommodation will play a big part in how your time is spent.

It is worth making the decision about where you prefer to stay as early as possible so that you secure what suits you. You will be eligible to apply for on-campus accommodation once you have been offered a place on your course.

Find out more:

- » www.cranfield.ac.uk/lifeatcranfield
- » www.cranfield.ac.uk/lifeatshrivenham



Local transport

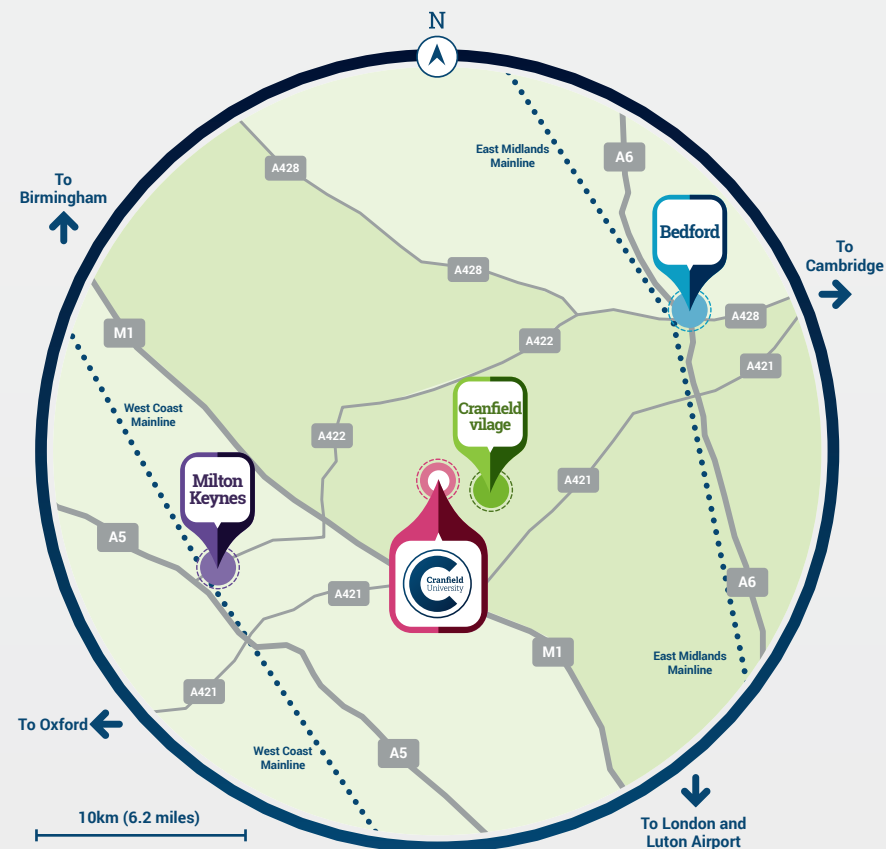
By bus

In partnership with Uno, we provide a dedicated, convenient and inexpensive bus service. This operates daily to and from Milton Keynes, Cranfield, Bedford and other towns and villages in the area until late in the evening. All the buses have free wifi and low-level entrances for pushchairs and wheelchairs.

For more information, visit:
www.unobus.info

By train

There are frequent and fast trains to London from Bedford and Milton Keynes. Please see more about rail links on page 105.



Distances from campus »

| Cranfield village | 30 mins | 10 mins | 5 mins | 5 mins |
|-------------------|---------|---------|---------|---------|
| Milton Keynes | - | 50 mins | 15 mins | 30 mins |
| Bedford | - | 55 mins | 20 mins | 50 mins |

Please see pages 80-85 for more information.

"There's a lot of things to do around Cranfield. I normally go to Milton Keynes to watch big football games and I go there to the mall if I want to buy anything and there's a park in Bedford where I can just sit and relax."

Wandile Vella,
current student,
(Renewable Energy MSc)



On-campus accommodation at Cranfield

Set in mature and scenic landscape, there is something to suit everyone on campus. Options include self-catering or catered houses for families or rooms for individuals or couples. There are rooms with private bathrooms and communal kitchens and places for couples to stay.

The variety of accommodation types is like a small village, with access to amenities and lecture spaces and laboratories all within walking distance.

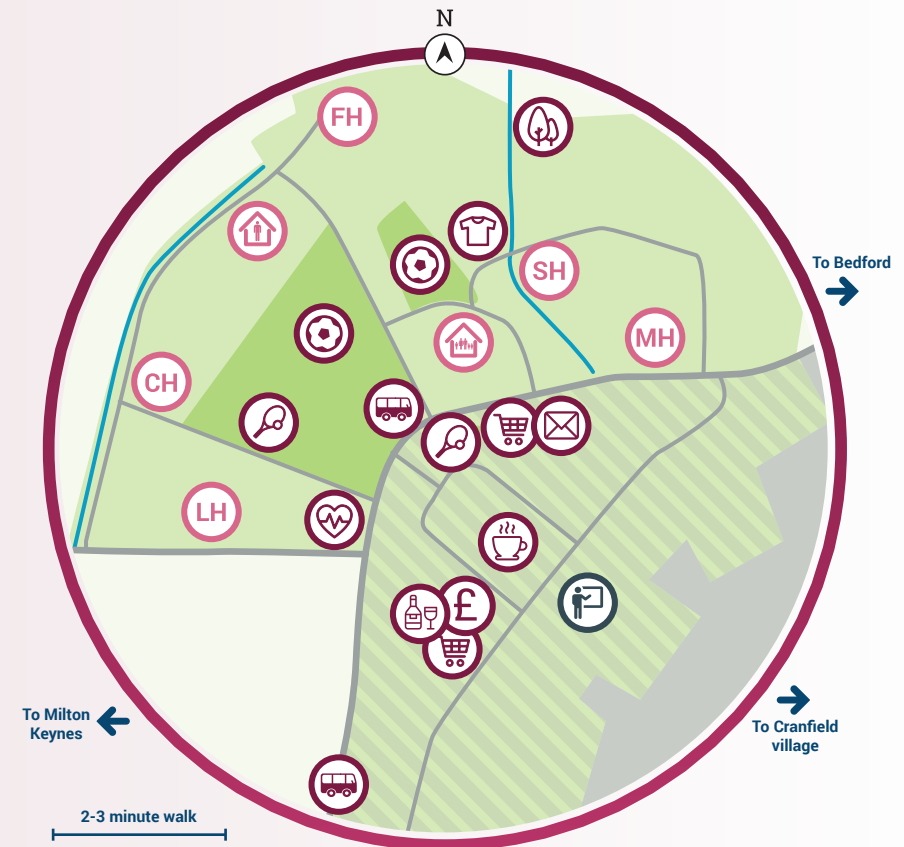
There are safe communal spaces to relax indoors and out, and to mix with fellow students.

Photo taken prior to the Covid-19 pandemic



"Living in Stringfellow Hall has been a good experience. The rooms and kitchen are in very good condition, and the attention provided by the accommodation staff is excellent. We usually threw dinner parties at least once a week. We tried food from different countries and had some drinks before heading to the Cranfield Students' Association (CSA) at the weekend."

Xavier Lebrija,
Edison Engineer, GE Renewable Energy,
(Renewable Energy MSc 2018)



CH Chilver Hall

FH Fedden House

LH Lanchester Hall

MH Mitchell Hall

SH Stringfellow Hall

Shared houses

Family houses

Shop

Post office

Café

Sports hall and gym

Cranfield Students' Association bar

Cash machine

Tennis courts

Playing field

Bus stop

Laundromat

Woodland trail

Lecture rooms and technical facilities

Please see pages 76-79 for more information about on-campus accommodation options.

On-campus accommodation options

Find out more: www.cranfield.ac.uk/accommodation

All prices include gas, water and electricity.



Single room occupancy



Couples accommodation



Family accommodation

All information is correct at time of print and subject to change.

- ¹ en-suite facilities may not apply to all rooms.
² lounge suite, dining room tables and chairs, beds, bedside cabinets, desk, wardrobe, chest of drawers, cooker, fridge freezer.
³ bed, desk, chair, drawers, hanging space, lamp, bin, noticeboard.

Lanchester Hall



Stringfellow Hall



Chilver Hall



Mitchell Hall – catered



- 348 rooms (half en-suite)
- Shared kitchens for 6-8 people
- Launderette

- 196 spacious en-suite rooms
- Shared kitchens for 5 people
- Lift
- Launderette

- 142 en-suite rooms
- Shared kitchens for 5-8 people

- Price includes one meal a day, others available at extra cost
- Study bedrooms with wash basin
- Launderette
- TV lounge

| | | | | |
|--|------------------|-------------|-------------|------------------|
| Disabled facilities/rooms | X | X | | |
| En-suite facilities ¹ | X | X | X | |
| Individual bathroom | | | | |
| Shared bathroom | X | | | X |
| Communal lounge | X | | | X |
| Individual living rooms | | | | |
| Individual kitchens | | | | |
| Communal kitchens/dining rooms | X | X | X | |
| Cooking/cutlery/kitchen utensils provided | X | X | X | |
| Fully furnished ² | | | | |
| Part furnished ³ | X | X | X | X |
| Communal garden | X | X | | X |
| Reception desk | X | | | X |
| Price per week 2021-2022 Minimum contract term applies | £110-£170 | £170 | £155 | £160-£195 |

On-campus accommodation options

Find out more: www.cranfield.ac.uk/accommodation

All prices include gas, water and electricity.



Single room occupancy



Couples accommodation



Family accommodation

All information is correct at time of print and subject to change.

- ¹ en-suite facilities may not apply to all rooms.
- ² lounge suite, dining room tables and chairs, beds, bedside cabinets, desk, wardrobe, chest of drawers, cooker, fridge freezer.
- ³ bed, desk, chair, drawers, hanging space, lamp, bin, noticeboard.

Shared houses



Fedden House studios – couples



Family houses



Coming soon...

- Individual study bedrooms
- Shared kitchens for 6-8 people

- 75 studios

- 2, 3 or 4-bedroom houses dependent on number, age and gender of children
- Individual garden

Two brand new halls of residence will open on our campus in 2021. Details will be available on our website soon.

www.cranfield.ac.uk/halls

Disabled facilities/rooms

En-suite facilities ¹

Individual bathroom

Shared bathroom

Communal lounge

Individual living rooms

Individual kitchens

Communal kitchens/dining rooms

Cooking/cutlery/kitchen utensils provided

Fully furnished ²

Part furnished ³

Communal garden

Reception desk

Price per week 2021-2022
Minimum contract term applies

£100-£150

£185

£210-£390

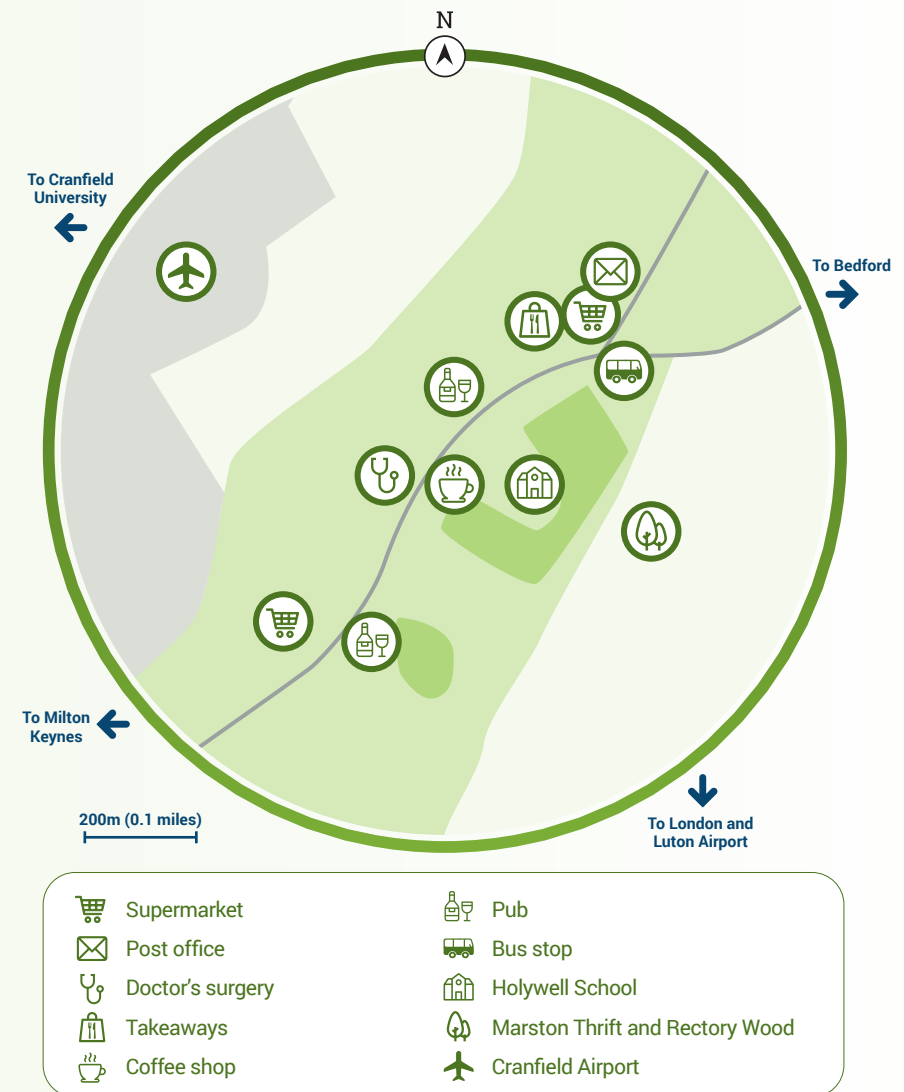
Living in Cranfield village

If you're looking for a quieter area than the local towns and cities, Cranfield village is very close to the Cranfield campus and is the perfect countryside setting.

Located on the other side of the Cranfield campus airfield, Cranfield village is a very popular student accommodation option, with a good choice of privately-rented houses, flats and lodgings. You can cycle to the campus on the dedicated cycle path in ten minutes; arrive by bus in five minutes or walk in 30 minutes. Cranfield offers a wide range of amenities, including supermarkets, takeaway restaurants, chemist, post office and hairdresser. Added attractions of the village are Rectory Wood and Marston Thrift (an ancient woodland that is also a Site of Special Scientific Interest) – great for walking, running and enjoying the countryside. There are also several schools for all ages for those with children. In addition to Cranfield, other nearby villages with accommodation include Wootton, North Crawley and Marston Moretaine.



Studentpad is our off-campus accommodation search engine to help you find your perfect home:
www.cranfieldstudentpad.co.uk



"If you are nervous about living in private accommodation, I'd encourage students to reach out to current and other future students. You can do that on social media or Facebook in the Cranfield Student Group. You can also reach out to other students on SpareRoom as well and just to ask some questions and what concerns you have."

Luke Waterman,
 current student,
 (Environmental Management for Business MSc)



Living in Milton Keynes

The nearby town of Milton Keynes is a popular option for students as it is a vibrant place with many facilities.

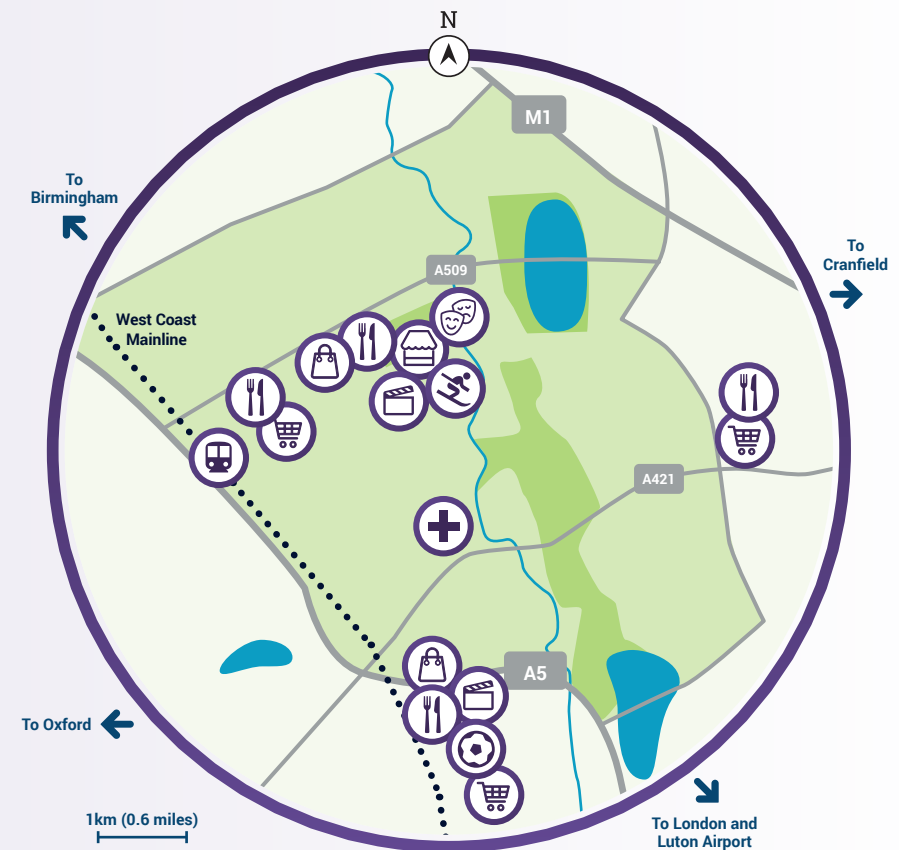
This 'new city' has lots of accommodation options, from flats (which are walkable to the train station) to new-build housing on attractive estates on the bus route to Cranfield. Some of the most exciting activities and best entertainment experiences in the UK can be found in Milton Keynes including great shopping, cinemas, theatres, sports, live music festivals and an indoor, real-snow slope.

For more information, visit:
www.destinationmiltonkeynes.co.uk
www.theparkstrust.com

Photo credit: Andy Stagg Photography and MK Council
 (photo taken prior to the Covid-19 pandemic)



Studentpad is our off-campus accommodation search engine to help you find your perfect home:
www.cranfieldstudentpad.co.uk



- | | |
|-----------------------------|--|
| Shopping centre | Supermarket |
| Cinema | Football stadium |
| Train station and bus depot | Theatre |
| Hospital | Outdoor markets |
| Restaurants | Xscape entertainment centre and indoor ski slope |

"In Milton Keynes, there is the Centre:MK which is a shopping centre with everything that you could possibly ever need. There are also some lovely parks which I would recommend exploring! We are very lucky here at Cranfield to be surrounded by nature with forests and lakes where I enjoy going for walks."

Marta Sanzo Miro,
 current student,
 (Food Systems and Management MSc)



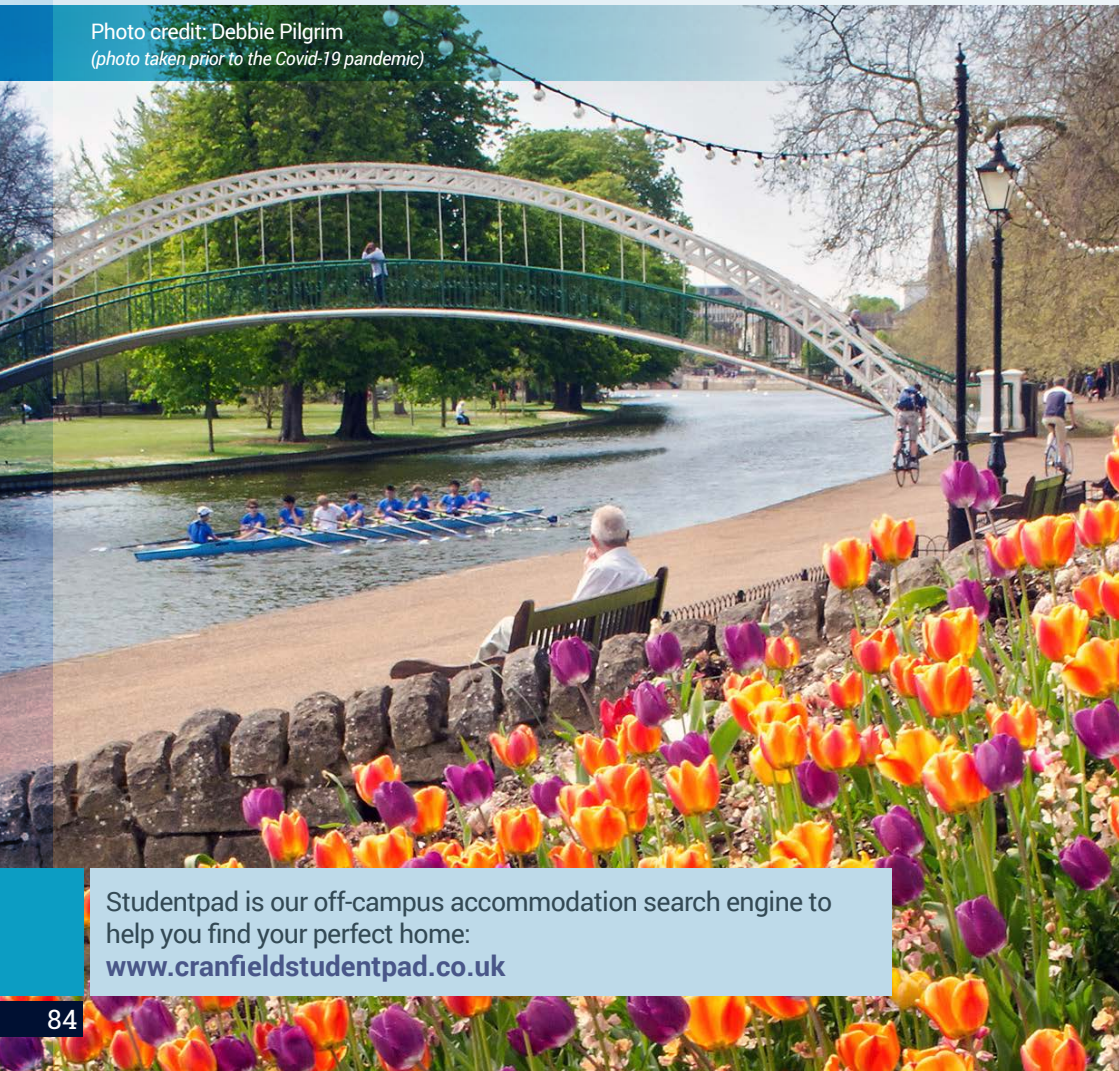
Living in Bedford

Bedford is a quintessential, small English town, close to Cranfield campus, with plenty of atmosphere.

With buses running from the University to Bedford, many students choose this as an off-campus accommodation option. There are plenty of things to see and do – from museums and historic buildings, to beautiful outdoor spaces, sports centres and late-night entertainment. Shops, street markets and all styles of restaurants, cafés and bars are abundant. The pretty River Ouse runs through the town.

For more information, visit:
www.lovebedford.co.uk
www.bedford.gov.uk

Photo credit: Debbie Pilgrim
(photo taken prior to the Covid-19 pandemic)



Studentpad is our off-campus accommodation search engine to help you find your perfect home:
www.cranfieldstudentpad.co.uk



"I love spending my time picking out fresh fruits and vegetables at the weekend markets in Bedford. It's right by the river which is really nice, so I just pass the day there before heading back to cook myself some good food."

Christelle Terzian,
current student,
(Future Food Sustainability MSc)





Important information

Funding, application and visa options

- 88 Finance your studies
- 90 How to apply
- 92 Visa information
- 94 Course directory
- 104 Important information before you apply
- 105 How to find us
- 106 Your roadmap to Cranfield

Finance your studies

A Cranfield degree is an investment in your career and a significant financial commitment. We know that this is often an important factor in making a decision about your studies. Several funding options, loans, bursaries and scholarships are available.

Many of our taught degree students fund their studies by putting together a funding package drawn from savings, small grants, loans or bursaries. Working with you, we can suggest a package that suits your course and circumstances.

Fees

Taught tuition fees

These are listed in the tables at the back of this prospectus. For more information see www.cranfield.ac.uk/fees

Paying for your research degree

Please read page 89 and see our website about the various ways you can fund your research degree.

Please note that, for some research degrees, there may be additional costs (known as bench fees, or additional fee elements) of up to £10,000 per annum, which will be explained during the application process. A guide to research fees can be found at www.cranfield.ac.uk/fees

Deposits

A deposit is required for all taught courses, some research degrees in Defence and Security and self-funded research degrees.

Fee status

The fees payable are determined with reference to the UK Government regulations. As a guiding principle, UK or Irish nationals who are ordinarily resident in either the UK or Republic of Ireland pay 'Home' fees. All other students (including those from the Channel Islands and the Isle of Man) pay 'Overseas' fees. Please see www.ukcisa.org.uk/Information--Advice/Fees-and-Money/England-fee-status

EU students from named partner institutions will be charged lower negotiated fees – see www.cranfield.ac.uk/partners for a list of these institutions.

Bursaries and scholarships

There are various bursaries for high quality applicants and discounts for Cranfield alumni. These may be available depending on your choice of course, your academic record, your country or your gender – there are several funding streams that may apply to you.

Research students are often able to apply for studentships or other funded opportunities – see our website for the latest information: www.cranfield.ac.uk/research/phd

You can benefit from our international partnerships, as well as research council funding, to help you with your studies.



Photo taken prior to the Covid-19 pandemic

Loans

There are several kinds of finance loans available. These are open to different groups of students, and have varying loan limits and interest rates. Examples include:

Future Finance loans

Loans of between £2,000 and £40,000 for full- or part-time study operated by Future Finance Loan Corporation Ltd. www.cranfield.ac.uk/futureloan

Cranfield Postgraduate Loan Scheme

Science, technology, engineering and mathematics (STEM) loans to contribute to the cost of study for full-time master's students, operated by Prodigy Finance Ltd. www.cranfield.ac.uk/loan

Lendwise Postgraduate Student Loan

Loans of between £5,000 and £100,000 to cover tuition fees and maintenance. www.cranfield.ac.uk/lendwise

The Postgraduate Loan

Student Finance England loans up to £11,222 for master's courses and £26,445 for doctoral courses to help with course fees and living costs. www.gov.uk/funding-for-postgraduate-study

Prodigy Finance MBA loan programme

Prodigy Finance provides funding for MBA students through contributions from the University, alumni and friends of the School of Management. www.cranfield.ac.uk/mbafunding

Managing your budget

Cost of living

For single students to cover the cost of accommodation and living expenses, you need to budget around £1,100 per month, for couples £1,600 and more for families.

Working during your studies

Full-time study is intense and part-time work is not recommended. Our part-time courses, often referred to as 'Executive', and mainly attended by UK students, are specifically designed to combine work and learning.

Search the funding finder on our website at:
www.cranfield.ac.uk/funding

How to apply

We welcome applications from students from all over the world for both our taught courses and research.

Our courses are highly competitive so applying as early as possible to secure your place is important. Please check your specific course on our website for application deadlines. This is important if you also want to apply for on-campus accommodation or need to apply for a visa to study in the UK.

Application process for taught courses

To access our taught course online application system, simply select your course and click the 'Apply now' button. Students attending a course at Shrivenham will also need to complete the security clearance application – see page 104 and www.cranfield.ac.uk/securityclearance

Before starting the application process you need to have:

- your previous education and employment record,
- your current English language standard,
- details about how you intend to fund your studies,
- nominations for your academic references.

Find out more: www.cranfield.ac.uk/taughtapply



Photo taken prior to the Covid-19 pandemic

Application process for postgraduate research programmes

Intake dates for research students are generally in February, June and October.

If you would like to study one of our research degrees, select your area of interest and apply online. Read more about the various entry routes for research on page 28.

You can also send an email with your research proposal to study@cranfield.ac.uk

Find out more: www.cranfield.ac.uk/researchapply

Additional options

Pre-master's in Engineering

If you do not meet our entry requirements for a master's, you may be eligible for Cranfield's Pre-master's in Engineering course.
www.cranfield.ac.uk/premasters

European Partnership Programme (EPP)

If you are applying through one of our European partner universities, please contact the international office at your home institution for advice about the application process.
www.cranfield.ac.uk/EPP

Postgraduate apprenticeships

Cranfield was one of the first universities in England to launch master's level apprenticeships with the introduction of the UK Government Apprenticeship Levy in 2017. Funding is available to provide postgraduate apprenticeships for employees working in England.
www.cranfield.ac.uk/mastershipscourses

Pre-sessional English for Academic Purposes (EAP)

We run English courses which are open to international students who do not meet the English language entry requirement for their Cranfield course and wish to gain an insight into academic life before beginning their postgraduate study.
www.cranfield.ac.uk/english

Education agents

You may want to consult one of the University's approved education agents. Please see the link below to find the contact details of an agent in your country.
www.cranfield.ac.uk/countries

Kaplan International College

International students may follow a preparation programme for both master's and doctoral-level study at our partner college, Kaplan International College in London.
www.cranfield.ac.uk/kaplan



Muscat University

We offer programmes in collaboration with Muscat University in Oman to equip graduates with the postgraduate skills suited to the region's ambitions in infrastructure development, logistics and wider commerce.
www.cranfield.ac.uk/muscat

"I had been working as a digital forensic scientist at a private lab in South Africa for about two and a half years. This degree will develop my professional knowledge and allow me to learn the why instead of just the how. I secured a Commonwealth Scholarship for my studies. It is a large part of why I am able to enjoy quality postgraduate education."

Saskia Kuschke,
current student, (Forensic Investigation Msc)



Visa information

For international applicants

In addition to applying to Cranfield, you need to ensure that you have the right to study in the UK.

If you do not already have a visa that allows you to remain in the UK for the duration of your course, you will need to apply for a student visa to study in the UK. Current immigration rules set by the UK Government are on the UK Home Office website. See www.gov.uk/browse/visas-immigration/student-visas

You may need to apply in two stages:

1. Apply for Academic Technology Approval Scheme (ATAS) if applicable.
2. Apply for a visa.

1 ATAS

Courses that require an ATAS certificate are marked on relevant course pages on our website. European Economic Area, Swiss, USA, Canada, Australia, Japan, Singapore and South Korea nationals do not require an ATAS certificate. Please see www.cranfield.ac.uk/visas. You need to obtain your ATAS certificate before you apply for a visa. ATAS certificates are processed and issued by the UK Government, it is free to apply and can be completed online. We suggest that you check the current processing times on the ATAS website.

If you transfer to us from a different university or change course while you are here, you may need to make a further ATAS certificate application before you start your course. See www.fco.gov.uk/atas

2 Visa

The UK visa application process is under constant review so it is important that you keep up-to-date with developments on how to apply for a visa to study in the UK. Any visa application must be accompanied by a Confirmation of Acceptance for Studies (CAS) number or a support letter from Cranfield University.



For more information about visas see our website:
www.cranfield.ac.uk/visas

Visa applications and ATAS:
www.cranfield.ac.uk/visas



Photo taken prior to the Covid-19 pandemic

Useful links for ATAS and visas

- Information for ATAS applications
www.fco.gov.uk/atas
- Current immigration rules
www.gov.uk/government/organisations/uk-visas-and-immigration
- Tier 4 student visas
www.cranfield.ac.uk/tier4visa
- Short-term study visa
www.gov.uk/study-visit-visa
- UK Council for International Student Affairs
www.ukcisa.org.uk

For more information, or help with your application, please contact:
E: studentimmigration@cranfield.ac.uk

Course directory

Further information on our courses: www.cranfield.ac.uk/coursefinder

Further information on our fees: www.cranfield.ac.uk/fees

| Course title All courses delivered at Cranfield unless stated | Award | Study mode FT – Full-time PT – Part-time | Full-time fees (See website for part-time fees) | | | | | | Course brochure title |
|--|--------------------------------|--|--|------------------------------|-------------------|------------------------------|-------------------|------------------------------|-----------------------|
| | | | Master's | | PgDip | | PgCert | | |
| | | | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | |
| Aerospace | | | | | | | | | |
| Advanced Lightweight and Composite Structures | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | Aerospace |
| Aerospace Computational Engineering | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Aerospace Dynamics | MSc, PgCert | FT, PT | £10,500 | £21,500 | n/a | n/a | £4,600 | £8,700 | |
| Aerospace Vehicle Design | MSc | FT | £11,500 | £24,000 | n/a | n/a | n/a | n/a | |
| Aircraft Engineering | MSc, PgDip, PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | |
| Applied Artificial Intelligence | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Astronautics and Space Engineering | MSc | FT, PT | £11,500 | £24,000 | n/a | n/a | n/a | n/a | |
| Autonomous Vehicle Dynamics and Control ⁵ | MSc | FT | £11,500 | £24,000 | n/a | n/a | n/a | n/a | |
| Computational and Software Techniques in Engineering | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Computational Fluid Dynamics | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Pre-master's in Engineering | PRE | FT | £8,600 | £17,500 | n/a | n/a | n/a | n/a | |
| Robotics | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Thermal Power | MSc, PgDip | FT | £11,500 | £24,000 | £9,000 | £19,200 | n/a | n/a | |
| Research degrees | PhD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |
| Defence and Security | | | | | | | | | |
| Communications Electronic Warfare ² | PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | Defence and Security |
| Counterterrorism, Risk Management and Resilience ⁴ | MSc, PgDip, PgCert | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | £5,000 | £8,100 | |
| Counterterrorism ⁴ | MSc, PgDip, PgCert | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | £5,000 | £8,100 | |
| Cyber Defence and Information Assurance ² | MSc, PgDip, PgCert | FT, PT | £19,500 | £19,500 | £15,700 | £15,700 | £7,850 | £7,850 | |
| Cyberspace Operations ² | MSc, PgDip, PgCert | FT, PT | £19,500 | £19,500 | £15,700 | £15,700 | £7,850 | £7,850 | |
| Defence and Security (Engineering) ³ | MSc, PgDip, PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | |
| Defence and Security (Engineering) (Capstone) ³ | MSc, PgCert | PT | | | | | | | |
| Defence and Security (Leadership and Management) ⁶ | MSc, PgDip, PgCert | PT | | | | | | | |
| Defence and Security (Technology) ³ | MSc, PgDip, PgCert | PT | | | | | | | |
| Defence and Security (Technology) (Capstone) ³ | MSc, PgCert | PT | | | | | | | |

| Course title All courses delivered at Cranfield unless stated | Award | Study mode FT – Full-time PT – Part-time | Full-time fees (See website for part-time fees) | | | | | | Course brochure title |
|--|-------|--|---|------------------------------|-------------------|------------------------------|-------------------|------------------------------|-----------------------|
| | | | Master's | | PgDip | | PgCert | | |
| | | | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | |

Defence and Security continued

| | | | | | | | | | |
|---|-----------------------------------|--------|--|---------|---------|---------|---------|---------|----------------------|
| Defence and Security Export | PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | Defence and Security |
| Defence Simulation and Modelling ² | MSc, PgDip, PgCert | FT, PT | £19,500 | £19,500 | £15,700 | £15,700 | £7,850 | £7,850 | |
| Explosives Ordnance Engineering ² | MSc, PgDip, PgCert | FT, PT | £31,000 | £31,000 | £24,800 | £24,800 | £13,600 | £13,600 | |
| Guided Weapon Systems ² | MSc, PgDip, PgCert | FT, PT | £31,000 | £31,000 | £24,800 | £24,800 | £13,600 | £13,600 | |
| Gun Systems Design ² | MSc, PgDip, PgCert | FT, PT | £31,000 | £31,000 | £24,800 | £24,800 | £13,600 | £13,600 | |
| Information Capability Management ² | MSc, PgDip, PgCert | FT, PT | £19,500 | £19,500 | £15,700 | £15,700 | £7,850 | £7,850 | |
| Military Aerospace and Airworthiness ² | MSc, PgDip, PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | |
| Military Electronic Systems Engineering ² | MSc, PgDip, PgCert | FT, PT | £31,000 | £31,000 | £24,800 | £24,800 | £13,600 | £13,600 | |
| Military Operational Research ² | MSc, PgDip, PgCert | FT, PT | £19,500 | £19,500 | £15,700 | £15,700 | £7,850 | £7,850 | |
| Military Vehicle Technology ² | MSc, PgDip, PgCert | FT, PT | £31,000 | £31,000 | £24,800 | £24,800 | £13,600 | £13,600 | |
| Sensors Electronic Warfare ² | PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | |
| Systems Engineering | MSc, PgDip | PT | | | | | | | |
| Systems Thinking Practice | MSc, PgDip, PgCert | PT | | | | | | | |
| Forensic Archaeology and Anthropology ⁴ | MSc, PgDip | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | n/a | n/a | Forensic science |
| Forensic Ballistics ⁴ | MSc, PgDip | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | n/a | n/a | |
| Forensic Explosive and Explosion Investigation ⁴ | MSc, PgDip | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | n/a | n/a | |
| Forensic Investigation ⁴ | MSc, PgDip, PgCert | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | £5,000 | £8,100 | |
| Forensic Investigation of Heritage Crime ⁴ | MSc, PgDip, PgCert | FT, PT | £10,000 | £20,000 | £8,000 | £16,200 | £5,000 | £8,100 | |
| Research degrees ³ | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |

Design

| | | | | | | | | | |
|------------------|-----------------------------------|--------|--|---------|--------|---------|--------|--------|------------------|
| Design Thinking | MDes, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Design |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |

Energy and Power

| | | | | | | | | | |
|--------------------------------------|--------------------|--------|---------|---------|--------|---------|--------|--------|------------------|
| Advanced Chemical Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Energy and Power |
| Advanced Digital Energy Systems | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Advanced Mechanical Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Advanced Process Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Energy Systems and Thermal Processes | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |

| Course title <small>All courses delivered at Cranfield unless stated</small> | Award | Study mode <small>FT – Full-time PT – Part-time</small> | Full-time fees (See website for part-time fees) | | | | | | Course brochure title |
|---|-----------------------------------|--|--|------------------------------|-------------------|------------------------------|-------------------|------------------------------|---|
| | | | Master's | | PgDip | | PgCert | | |
| | | | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | |
| Energy and Power continued | | | | | | | | | |
| Offshore Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Energy and Power |
| Renewable Energy | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |
| Environment and Agrifood | | | | | | | | | |
| Applied Bioinformatics | MSc | FT, PT | £10,500 | £20,500 | n/a | n/a | n/a | n/a | Agrifood |
| Food Systems and Management | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Future Food Sustainability | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Environmental Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Environment |
| Environmental Management for Business | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Geographical Information Management | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Global Environmental Change | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |
| School of Management | | | | | | | | | |
| Master of Business Administration (MBA) | MBA | FT | £39,000 | £39,000 | n/a | n/a | n/a | n/a | Full-time MBA |
| Master of Business Administration (Executive) | MBA | PT | See www.cranfield.ac.uk/fees for details | | | | | | MBA Executive |
| Finance and Management | MSc | FT | £23,000 | £25,000 | n/a | n/a | n/a | n/a | Finance |
| Investment Management | MSc | FT | £23,000 | £25,000 | n/a | n/a | n/a | n/a | |
| Logistics and Supply Chain Management (Executive) | MSc, PgDip, PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | Executive Logistics and Supply Chain Management |
| Logistics and Supply Chain Management | MSc | FT | £13,000 | £24,500 | n/a | n/a | n/a | n/a | Supply Chain Management |
| Procurement and Supply Chain Management | MSc | FT | £13,000 | £24,500 | n/a | n/a | n/a | n/a | |
| Management | MSc | FT | £15,000 | £26,000 | n/a | n/a | n/a | n/a | Management |
| Management and Corporate Sustainability | MSc | FT | £12,250 | £21,500 | n/a | n/a | n/a | n/a | |
| Management and Entrepreneurship | MSc | FT | £12,250 | £21,500 | n/a | n/a | n/a | n/a | |
| Management and Human Resource Management | MSc | FT | £12,250 | £21,500 | n/a | n/a | n/a | n/a | |
| Management and Leadership | MSc | PT | See www.cranfield.ac.uk/fees for details | | | | | | Management and Leadership |
| Marketing and Leadership | MSc | PT | See www.cranfield.ac.uk/fees for details | | | | | | Marketing and Leadership |

| Course title All courses delivered at Cranfield unless stated | Award | Study mode FT – Full-time PT – Part-time | Full-time fees (See website for part-time fees) | | | | | | Course brochure title |
|--|-------|--|---|------------------------------|-------------------|------------------------------|-------------------|------------------------------|-----------------------|
| | | | Master's | | PgDip | | PgCert | | |
| | | | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | |

School of Management continued

| | | | | | | | | | |
|----------------------------|-------------------------------------|--------|--|---------|-----|-----|-----|-----|----------------------------|
| Retail and Digital Banking | MSc | PT | See www.cranfield.ac.uk/fees for details | | | | | | Retail and Digital Banking |
| Strategic Marketing | MSc | FT | £13,000 | £24,500 | n/a | n/a | n/a | n/a | Strategic Marketing |
| Research degrees | PhD, DBA, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |

Manufacturing

| | | | | | | | | | |
|---|--------------------------------------|--------|--|---------|--------|---------|--------|--------|----------------------------------|
| Advanced Materials | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Manufacturing and materials |
| Aerospace Manufacturing | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Aerospace Materials | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Engineering and Management of Manufacturing Systems | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Global Product Development and Management | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Maintenance Engineering and Asset Management | MSc | FT, PT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Management and Information Systems | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Manufacturing Technology and Management | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Metal Additive Manufacturing | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Welding Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Digital and Technology Solutions | MSc, PgDip | PT | See www.cranfield.ac.uk/fees for details | | | | | | Digital and Technology Solutions |
| Engineering Competence | MSc, PgDip | PT | See www.cranfield.ac.uk/fees for details | | | | | | Engineering Competence |
| Operations Excellence | MSc | PT | See www.cranfield.ac.uk/fees for details | | | | | | Operations Excellence |
| Through-life System Sustainment | MSc | PT | See www.cranfield.ac.uk/fees for details | | | | | | Through-life System Sustainment |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |

Transport Systems

| | | | | | | | | | |
|--------------------------------------|------------|----|--|---------|-----|-----|-----|-----|---------------|
| Air Transport Management | MSc | FT | £11,500 | £24,000 | n/a | n/a | n/a | n/a | Air transport |
| Air Transport Management (Executive) | MSc, PgDip | PT | See www.cranfield.ac.uk/fees for details | | | | | | |
| Airport Planning and Management | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Advanced Motorsport Engineering | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | Motorsport |
| Advanced Motorsport Mechatronics | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |

| Course title All courses delivered at Cranfield unless stated | Award | Study mode FT – Full-time PT – Part-time | Full-time fees (See website for part-time fees) | | | | | | Course brochure title |
|--|-----------------------------------|--|--|------------------------------|-------------------|------------------------------|-------------------|------------------------------|---------------------------------------|
| | | | Master's | | PgDip | | PgCert | | |
| | | | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | Home ¹ | EU/ Overseas ¹ | |
| Transport Systems continued | | | | | | | | | |
| Automotive Engineering | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | Automotive engineering and technology |
| Automotive Mechatronics | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Connected and Autonomous Vehicle Engineering (Automotive) | MSc | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Airworthiness | MSc, PgDip, PgCert | PT | See www.cranfield.ac.uk/fees for details | | | | | | Safety and accident investigation |
| Aviation Safety Management, Risk and Regulation | MSc, PgDip, PgCert | PT | | | | | | | |
| Safety and Accident Investigation | MSc, PgDip, PgCert | PT | | | | | | | |
| Safety and Human Factors in Aviation | MSc, PgCert | FT | £10,500 | £21,500 | n/a | n/a | n/a | n/a | |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |
| Water | | | | | | | | | |
| Advanced Water Management | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | Water |
| Water and Sanitation for Development | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Water and Wastewater Engineering | MSc, PgDip, PgCert | FT, PT | £10,500 | £21,500 | £8,000 | £17,400 | £4,600 | £8,700 | |
| Research degrees | PhD, EngD, MPhil, MSc by Research | FT, PT | See www.cranfield.ac.uk/fees for details | | | | | | Research degrees |

¹ See page 88 for fee status notes.

² Course delivered at the Defence Academy of the United Kingdom, Shrivenham (please see page 104 and specific course page on our website).

³ Course delivered at the Defence Academy of the United Kingdom, Shrivenham and/or Cranfield (please see page 104 and specific course page on our website).

⁴ Selected modules and/or parts of modules may be delivered at the Defence Academy of the United Kingdom, Shrivenham (please see page 104 and specific course page on our website).

⁵ Includes drone pilot's licence.

⁶ Delivered online.

Deposits – please note that some taught courses and research degrees require a deposit. Please see www.cranfield.ac.uk/fees for details.

Further information on our courses:
www.cranfield.ac.uk/coursefinder

Further information on our fees:
www.cranfield.ac.uk/fees

Important information before you apply

Our prospectus is prepared annually, which may mean it is produced several months before you are due to commence your studies. Every effort is made to ensure that the prospectus is correct at the time it is printed.

We believe that our education should remain current and relevant. To achieve this, we periodically review and update our academic provision. We will, wherever possible, ensure that the overall education experience for you, our student learners, is enhanced as a result of any changes.

It is important that our review process includes feedback from our learners, our staff and our external stakeholders. Other changes, for example to facilities or fees, may become necessary as a result of staff and facility changes; for academic reasons; or owing to external factors including changes to the law and Government policy such as Covid-19.

Cranfield will make every effort to keep any changes to a minimum, except where the changes are in your favour. For these reasons, changes can take place in the lead-up and sometimes during your studies. This may include changes to the academic provision and/or its assessment, staffing and/or facilities.

You should check the website for updates. Where changes occur during your studies, the University has established processes for consulting and informing you of these. Our Student Protection Plan, in line with Office for Students expectations, sets out our approach to ensuring the continuation and quality of study should a risk to the continuation of your study crystallise. The Plan can be found on our website on one of the links below.

Admission to Cranfield University is subject to the requirement that you will comply with our registration procedure and will duly observe the provisions of the regulations and other guidance of the University which apply during your period of study.

The terms and conditions applicable to an offer of a place at Cranfield are available at:

Taught degrees:
www.cranfield.ac.uk/taughtapply

Research degrees:
www.cranfield.ac.uk/researchapply

Also see:
www.cranfield.ac.uk/importantnotes

Security clearance for Shrivenham

Some Cranfield University courses are delivered at the Defence Academy of the United Kingdom, Shrivenham which is a Ministry of Defence (MOD) site.

All applicants to courses that are wholly or partially delivered at Shrivenham must complete the HMG Baseline Personnel Security Standard V4 April 2014 (BPSS) prior to registration on the course or must already hold a security clearance to this level or higher.

Your application and BPSS clearance application will be shared during the application process with the MOD. All personal data provided by you will be shared with the MOD for it to undertake its own assessment. The MOD has ultimate discretion over whether to admit applicants to the Shrivenham site. This information will be returned by the MOD to Cranfield University after checks are completed and no copies will be retained by the MOD. BPSS checks may involve confirmation of the following:

- Identity (e.g. Photo ID),
- Proof of current address,
- Nationality and immigration status,
- Employment/academic history (covering the past three years),
- Criminal record (unspent convictions only).

Additionally, applicants are required to give a reasonable account of any significant periods (six months or more in the past three years) of time spent abroad.

This may be revised from time to time, dependent on national security requirements. For more details, please consult the guidance which you can find at www.cranfield.ac.uk/securityclearance

Applicants are advised to allow additional time for BPSS clearance applications to be processed following submission of a course application. Inability to access the Shrivenham site as a result of failure to meet security clearance requirements will result in a withdrawal of offer, or, if already registered, a termination of registration.

For more information, visit the relevant course page: www.cranfield.ac.uk/study

How to find us

Cranfield – MK43 0AL, UK

The Cranfield campus is located just outside the village of Cranfield on the Bedfordshire-Buckinghamshire border, between Milton Keynes and Bedford.

By air: London Luton is around 30 minutes' drive from Cranfield campus, while London Heathrow, London Stansted, East Midlands and Birmingham airports can be reached in 90 minutes. The campus also has its own airport, used by private aircraft owners.

By rail: Direct trains from Bedford and Luton to London St Pancras International and fast trains from Milton Keynes to London Euston take just over 30 minutes. For more information, visit: www.nationalrail.co.uk

By road: Cranfield campus is located ten minutes from the M1 motorway and can be accessed from either junction 13 or 14.



Shrivenham – SN6 8LA, UK

Cranfield University at Shrivenham is located on the edge of Shrivenham village just off the A420 between Oxford and Swindon. Swindon is approximately 10km west of the site and Oxford is around 34km east.

By air: The major UK airports are easy and quick to reach – Heathrow is less than two hours by road and Gatwick, Luton, Bristol, Southampton and Cardiff airports are within easy reach.

By rail: Nearby Swindon is the best rail link to London (less than an hour); the Great WesternTrains service also links Swindon with South Wales and other services provide easy access to the Midlands and North. For more information, visit: www.nationalrail.co.uk

By road: Cranfield University at Shrivenham is close to the M4 motorway, which links London and South Wales.

For more information, visit: www.cranfield.ac.uk/visit

Your roadmap

to Cranfield

Now you have made your decision to further your career, here is your step-by-step guide.

There is more information on the following pages and on our website.

Join us at an Open Day or visit us at a recruitment event around the world:
www.cranfield.ac.uk/events



We work with over
1,500 companies and
organisations
based in
over 40 countries

These organisations include:



AIRBUS



BAE SYSTEMS



centrica



Heathrow

Jacobs

John Lewis



KUEHNE+NAGEL



M&S



THALES



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 blogs.cranfield.ac.uk

Cranfield University
 Cranfield
 MK43 0AL, UK
 T: +44 (0)1234 758540
 E: study@cranfield.ac.uk
www.cranfield.ac.uk



THE QUEEN'S
 ANNIVERSARY PRIZES
 FOR HIGHER AND FURTHER EDUCATION
 2019

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.

Some photographs in this publication were taken prior to the 2020 pandemic. Cranfield University follows the latest Government guidelines on social distancing and use of personal protective equipment (PPE).

October 2020.