

# Aerospace At a Glance



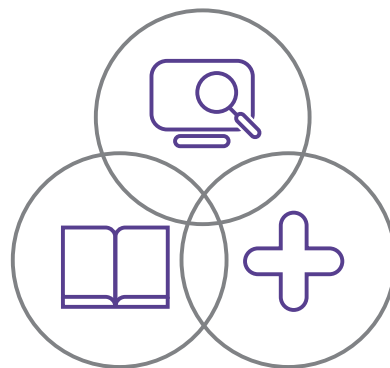
# Welcome to Cranfield University

At the **forefront of aerospace technology** providing postgraduate education and training for 70 years. **World-leading research** in collaboration with our strategic partners **directly contributes to the economic growth of the global aerospace sector.**

With our industrial partners we are rethinking the airports, airlines, airspace management and aircraft of the future.

## We provide:

Transformational  
research



Premier  
learning

Impact and  
influence





# Premier learning

for professionals

**UK  
No.1**

Aerospace, Engineering and  
Technology postgraduates

**Flagship  
MBA**

Ranked 9 in UK, 19 in Europe  
and 57 in the world.

## Cranfield is:

- the UK's **top destination for aerospace engineering** postgraduate students,
- the **largest provider of accredited aerospace degree courses**; helping our graduates to qualify as Chartered Engineers (CEng),
- a recipient of the prestigious **Queen's Anniversary Prize** for world-leading work in aviation safety.



"Cranfield definitely helped me secure my current job. As a result of my master's, I have managed to get a job in Germany, helping to fly the European Space Agency's most exciting interplanetary missions."

**Robert Arthur**, Flight Dynamics  
Engineer, European Space Operations  
Centre (ESOC), MSc 2016



"My course prepared me to be an aircraft designer with good hands-on experience in design software, planning and budgeting. At Cranfield I have honed my teamwork and project management skills, which has enabled me to set up my own company."

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

## Our learners:

Over two-thirds of our Aerospace learners come from outside the UK, representing **60+ countries**



Our **unique environment** of learners from across the world provides a **stimulating experience** that mirrors the global workplace.

## Our alumni:

A professional network of

**60,000+**



# Transformational research

meeting the needs of business, government and wider society

**REF2014**  
Research Excellence Framework

**81% of our research is world-leading or internationally excellent**

**UK top 4**

**For commercial research, consultancy and professional development** - alongside universities of Oxford, Imperial and Cambridge.

## Cranfield is at the heart of UK aerospace research, hosting:

- the Aerospace Technology Institute (ATI),
- the National Aerodynamics Centre,
- the Rolls-Royce University Technology Centre (UTC) in Performance Engineering,
- a laboratory developing the technology behind autonomous vehicles which operate in the air, on land, at sea and in space.

### Development of the world's first flapless aircraft

Cranfield developed 'Demon'; a blended wing body unmanned aircraft. In partnership with BAE Systems and EPSRC, the project successfully integrated multidisciplinary technologies into a flying demonstrator – the world's first flapless aircraft..

"Demon's technological innovations are filtering through to a range of our other aviation platforms."

**Dr Clyde Warsop**, Project Manager, FLAVIIR (Flapless Air Vehicle Integrated Industrial Research), BAE Systems

## Unique facilities include:

### Aerospace Integration Research Centre (AIRC)

This new AIRC centre will foster collaboration between industry and academia and provide capabilities comparable with the leading aerospace facilities across Europe and the world.

### Cranfield Airport

We are the only UK university with our own airport, home to the Facility for Airborne Atmospheric Measurements (FAAM) for worldwide research campaigns.

### National Wind Tunnel Facility (NWTF)

A significant national asset supported by EPSRC and the UK Aerodynamics Centre, placing us, together with our strategic partner, the Aircraft Research Association, at the forefront of research into aerodynamics.

### Aero-structure Assembly & Systems Installation Laboratory

Centre of Excellence and a core facility of the EPSRC Centre for Innovative Manufacturing in Intelligent Automation, working in partnership with Airbus to develop new aircraft assembly technologies.

### Improving sustainable business travel

An environmental impact reduction toolkit, developed in partnership with the UK's Institute of Travel Management and the Global Business Travel Association (GBTA), enables businesses to make more sustainable travel choices.

"The toolkit has proven invaluable in helping corporate travel buyers to successfully reduce their carbon footprint."

**Bernard Harrop**, Head of Sustainability, Project ICARUS, Global Business Travel Association



# Impact and influence



We work with **1,500+** businesses and governments around the world

**Strategic relationships:** with companies such as Airbus, AVIC, BAE Systems, Boeing and Rolls-Royce.

**Aircraft design:** our exploratory models on blended wing body informed the design of the Boeing X-48B. Manufactured by Cranfield, the model has had more test flights than any other aircraft in the X-series and provides advantages in structural, aerodynamic and operating efficiencies.

**Power and propulsion:** our advanced thermal barrier coating systems developed with Rolls-Royce have improved the thermal efficiency of gas turbines, reducing specific fuel consumption by over 1%.

**Autonomous and Cyber-physical systems:** we have developed the first flapless unmanned aircraft through our work with BAE Systems and in conjunction with Airbus are creating technology to enable autonomous aerial vehicles to operate out of the line of sight.

**Transferring knowledge:** our aerospace capabilities within computational engineering sciences also benefit the automotive sector. We have developed methods for cooling system optimisation for Jaguar Land Rover vehicles by improving the aerodynamic efficiency, improving sustainability.



# Cranfield University works with:



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