



# Advanced Mechanical Engineering MSc

[www.cranfield.ac.uk/ame](http://www.cranfield.ac.uk/ame)



## Be part of the mechanical engineering drive to a sustainable future.

The Advanced Mechanical Engineering MSc is designed to prepare you for a successful mechanical engineering career leading large, complex projects. You will learn state-of-the-art mechanical engineering methods, apply them to real-world problems via industrially-focused modules and research projects, whilst gaining the essential management skills to bring your ideas to life. Ranked in the UK top 5 for mechanical engineering, Cranfield offers a unique, postgraduate-only environment, with near-industrial scale engineering facilities and a teaching team with extensive experience of solving real-world issues within industry.

## Who is it for?

This course is designed for engineering, physics or mathematics graduates who wish to develop a successful mechanical engineering career in industry, government or research. It will equip you with the advanced engineering and management skills demanded by leading global employers, including project management, design, computer-aided engineering, operation and optimisation of machinery, structural mechanics and integrity, and technology leadership.

## Your career

This course has been designed to provide you with engineering skills and experience which are transferable to the sector of your choice, including energy, aerospace, automotive or manufacturing. Our focus is on ensuring that you can make an impact from day one in your career. We do this by teaching you the state-of-the-art skills in mechanical engineering, enabling you to apply what you learn through industrially-relevant group and individual research projects and equipping you with technology leadership skills.

Graduates of this course have gone on to work in a range of roles, including:

- Mechanical Design Engineer at Siemens,
- Production Line Supervisor and Lean Implementer at GKN Land Systems,
- Staff Engineer at BPP Technical Services Ltd working on offshore oil and gas engineering,
- Management Associate at BMW Group UK Limited, project Engineer at BASF Coatings S.A.

## Overview

### Start date

Full-time: October. Part-time: October

### Duration

One year full-time; two-three years part-time

### Qualification

MSc, PgDip, PgCert

### Study type

Full-time / Part-time

### Structure

Taught modules 80 credits/800 hours, Group projects 40 credits/400 hours, Individual project 60 credits/600 hours

### Campus

Cranfield campus

### Entry requirements

We welcome applications from talented individuals of all backgrounds and each application is considered on its individual merit. Usually applicants must hold:

A UK lower second-class (2:2) undergraduate degree with honours, as a minimum, or equivalent international qualification.

Ideally, applicants will have studied in a related engineering or applied science discipline.

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

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

### ATAS clearance

This course requires Academic Technology Approval Scheme (ATAS) clearance.

ATAS is run by the UK Government's Foreign, Commonwealth and Development Office (FCDO) and applies to international students, except exempt nationalities, who need a visa to study in the UK. Further information can be found in our Application guide.

## Fees

Please see [www.cranfield.ac.uk/fees](http://www.cranfield.ac.uk/fees) for detailed information about fee status, full-time and part-time fees as well as deposit requirements and bursary and scholarship information.

## Course details

The taught element of the course comprises of eight modules and is delivered between October and February.

Modules are delivered over two weeks, in the early part of the year, the modules cover the fundamentals of advanced mechanical engineering. These are intensive weeks, consisting of all-day teaching. During this period, there are some weeks which are largely free of structured teaching to allow time for more independent learning and reflection, completion of assignments or exam preparation.

After the winter break, there are three modules that involve more active problem-based learning and typically include practical or laboratory sessions, case studies or group work. These are an opportunity for you to apply and integrate your knowledge. These modules are all assessed by assignments that are completed during the two-week period. The focus on group work and application within these modules provides a valuable transition into the group project.

### Modules

Keeping our courses up-to-date and current requires constant innovation and change. The modules we offer reflect the needs of business and industry and the research interests of our staff. As a result, they may change or be withdrawn due to research developments, legislation changes or for a variety of other reasons. Changes may also be designed to improve the student learning experience or to respond to feedback from students, external examiners, accreditation bodies and industrial advisory panels.

To give you a taster, we have listed below the compulsory and elective (where applicable) modules which are currently affiliated with this course. All modules are indicative only, and may be subject to change for your year of entry

#### Compulsory modules

All the modules in the following list need to be taken as part of this course.

##### Structural Integrity

##### Fluid Mechanics and Loading

##### Computational Fluid Dynamics for Renewable Energy

##### Engineering Stress Analysis: Theory and Simulations

##### Engineering Design and Project Management

##### Assessing Risk and Failure

##### Principles of Engineering

#### Elective modules

Select one from the list below

##### Component Design

##### Design of Offshore Energy Structures

"The highlight for me was definitely the group project – working in relation to wind turbines. We studied a new component used in the base and the foundations of wind turbine structures and it was just a fantastic experience. I worked with some really great fellow students and took on a bit of a leadership role that I found I really enjoyed."

**Helen Ryan**

Advanced Software Engineer, Siemens Digital Industries Software, Advanced Mechanical Engineering MSc, 2020-2021

## Accreditation

The MSc of this course is accredited by the Institution of Mechanical Engineers (IMechE) and The Energy Institute.



## Class profile 2023/24

#### Gender:

Male 86% - Female 14%

#### Age range:

20 - 44 years

#### Class size:

32

#### Nationality:

UK: 19% International: 81%

For more information contact our Admissions Team:  
**T: +44 (0)1234 758082**

Visit campus for yourself and meet current students and our academics at our next Open Day:  
**[www.cranfield.ac.uk/penday](http://www.cranfield.ac.uk/penday)**

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Every effort is made to ensure that the information provided here is correct at the time it is published. Please check our website for the latest information.