



# Studying Engineering in the UK

Study UK Schools  
Roadshow

Hong Kong

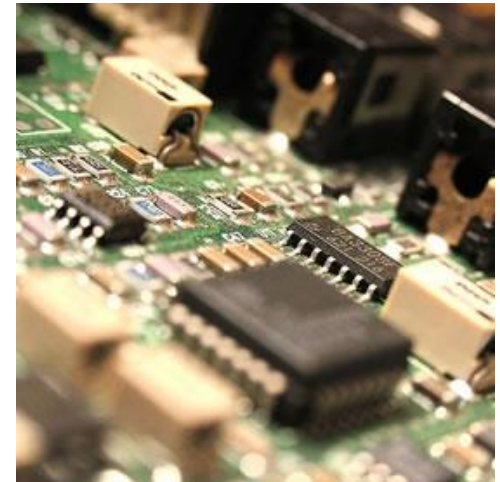
September 2018

STUDY UK  
DISCOVER YOU



# What is engineering?

- Applying scientific principles to the
  - design, research and development, testing, construction, operation, production, maintenance and troubleshooting
- of almost everything
  - Travel, manufacture, communications, infrastructure, business, leisure...



**→ OFFERS A VERY WIDE RANGE OF STUDY AND REWARDING CAREERS**



# Engineering disciplines

- Aerospace
- Chemical
- Civil
- Electrical
- Mechanical
- Marine
- Environment
- Nuclear
- Biomedical
- Computing
- Sports...

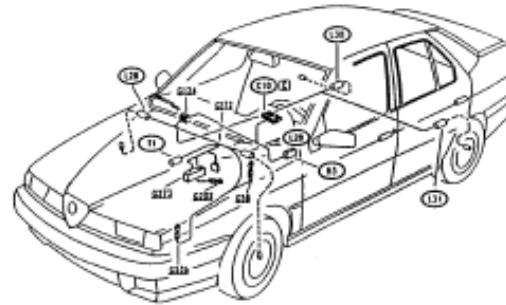


→ ENGINEERS OFTEN WORK IN INTERDISCIPLINARY TEAMS

# Building a car

## Wide range of disciplines:

- Mechanics
- Aerodynamics
- Structures
- Materials
- Systems
- Control
- Electronics
- Combustion, heat transfer
- Comfort and safety



→ NEED TO BE FLEXIBLE, ABLE TO WORK IN DIFFERENT AREAS AND WITH OTHER DISCIPLINES

- **9 Academic Schools**

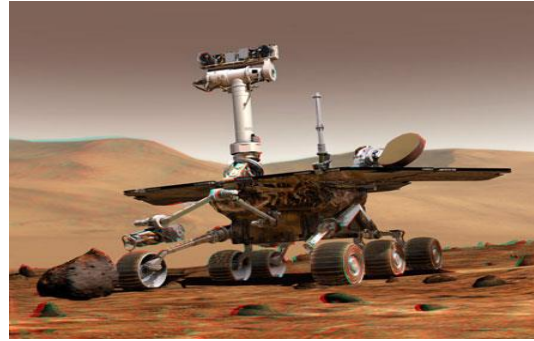
- Chemical Engineering and Analytical Science
- Chemistry
- Computer Science
- Earth and Environmental Sciences
- Electrical and Electronic Engineering
- Materials
- Mathematics
- Mechanical, Aerospace and Civil Engineering
- Physics and Astronomy



- **Integrated foundation year leading to undergraduate 1st year entry**
- **Around 8000 undergraduate students in FSE.**



# Aerospace Engineering



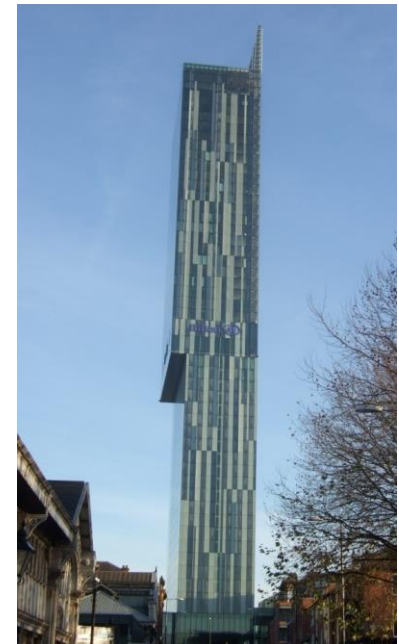
- Aircraft: fixed wing, helicopters, UAV's...
- Spacecraft, satellites...
- Related applications: vehicle/train aerodynamics, wind turbines...



# Civil Engineering

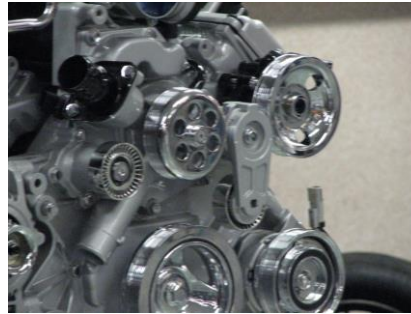


- Buildings, bridges, roads...
- Urban environment...
- Canals, dams...

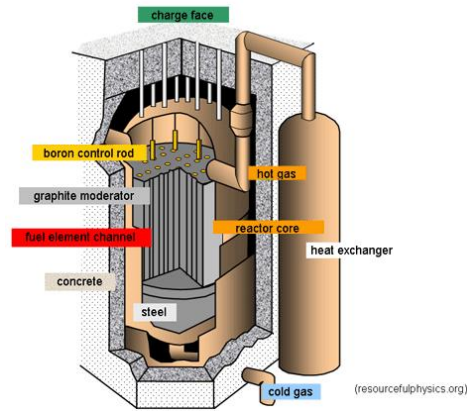
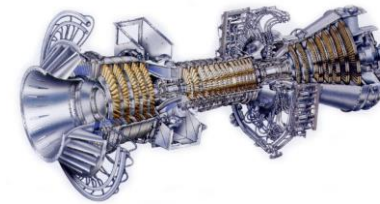




# Mechanical Engineering

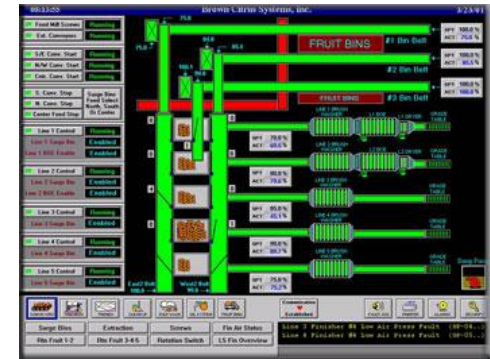


- Vehicles, engines, machinery...
- Power generation...
- Manufacturing, production...





# Chemical Engineering



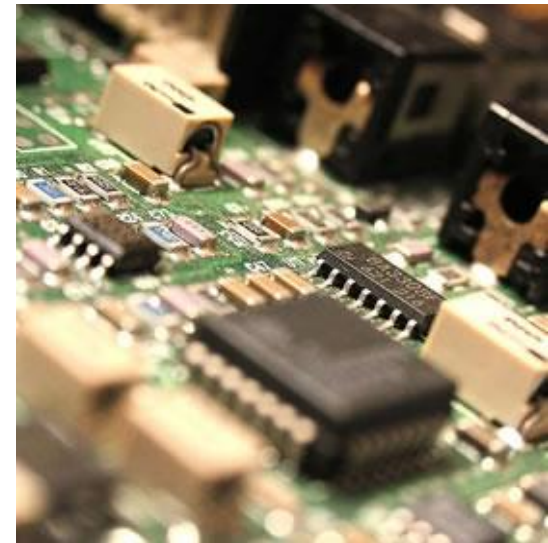
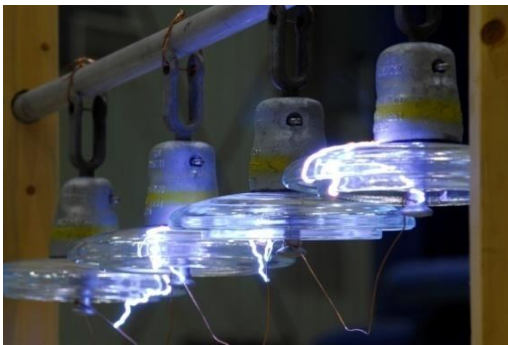
- Design and managing production processes...
- Wide range of applications: petrochemicals, plastics, food, toiletries,...



# Electrical Engineering

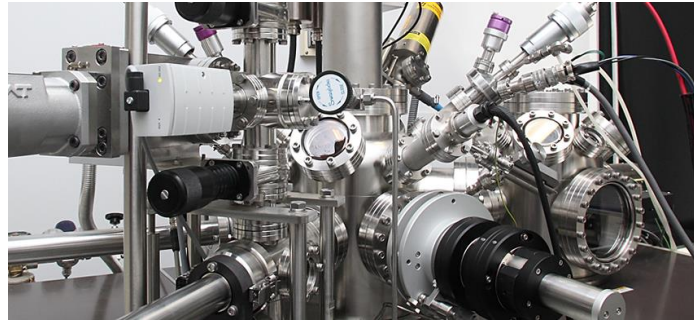
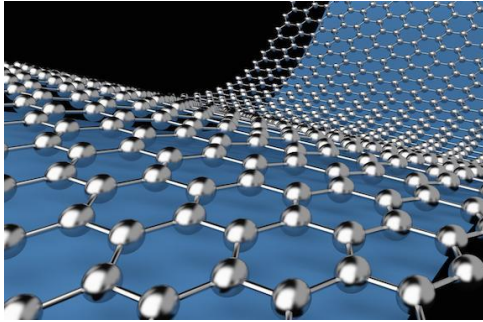


- Electricity generation and distribution...
- Electronic, mobile, wireless systems...
- Control, “smart” systems...

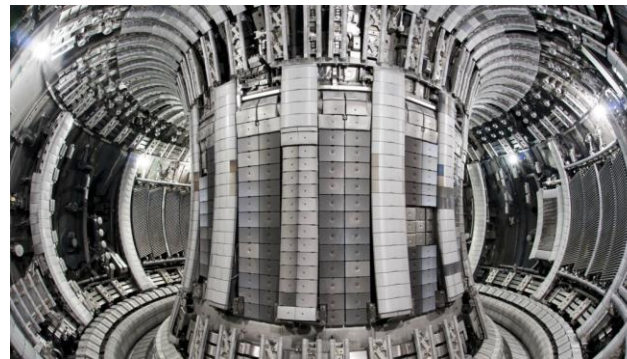




# Materials Science and Engineering



- Material properties and behaviour, linking science with a wide range of engineering applications.
- High temperature, lightweight, nano-materials, bio-materials, textiles,...
- Engines, robotics, nuclear, prosthetics & implants,...



# Degree Programmes – BEng and MEng

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- A wide range of degree programmes across Engineering Schools.
  - Bachelors programmes (BEng) are typically 3 years study
  - Integrated Masters programmes (MEng) are typically 4 years study
  
- Can transfer between corresponding Bachelors/Masters programmes.





# Typical Degree Programmes

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- Bachelor and MEng Programmes covering each discipline:
  - Aerospace Engineering
  - Civil Engineering
  - Mechanical Engineering
  - Electrical & Electronic Engineering
  - Chemical Engineering
  - Materials Science & Engineering
- Many programmes offer “with Industrial Experience” (either as extra year or part of study years)



# Typical Degree Programme options

- Programmes allowing students to gain extra specialism in certain areas:
  - Chemical Engineering with Energy & Environment
  - Electronic Engineering
  - Mechatronic Engineering
  - Aerospace Engineering with Management
  - Civil Engineering (Enterprise)
  - Civil and Structural Engineering
  - Mechanical Engineering with Management
  - Mechanical Engineering (Nuclear Engineering)
  - Materials Science and Engineering with Biomaterials/Polymers/Metallurgy/ Corrosion/Textile Technology





# Degree Accreditation

The University of Manchester

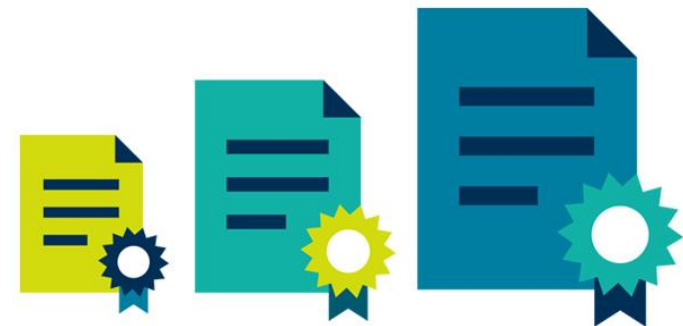
- Programmes are accredited by relevant Professional Bodies:
  - MEng degree typically satisfies the academic requirement towards Chartership.
  - BEng degree typically partially satisfies the academic requirements.



# Entry Qualifications

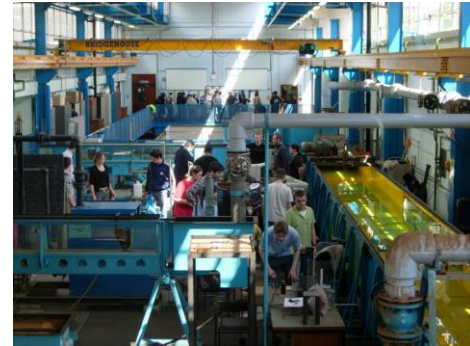
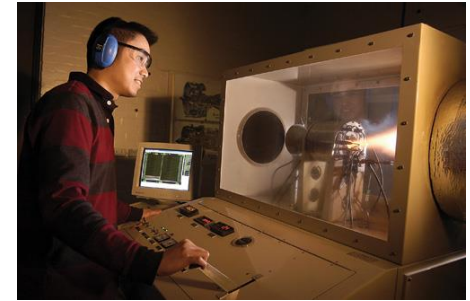
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- **Precise entry requirements and grades vary by university**
  - Most Engineering degree courses require Maths
  - Some require other specific subjects (eg Physics)
- **A wide range of other qualifications also considered.**
  - Eg. Combinations of A Levels/relevant BTEC



# Teaching & Learning

- Lectures and tutorials
- Practical laboratory sessions
- Individual research and group design projects
- Field work
- Online material

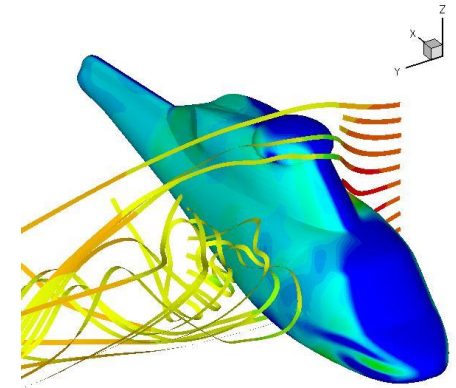




# Engineering skills

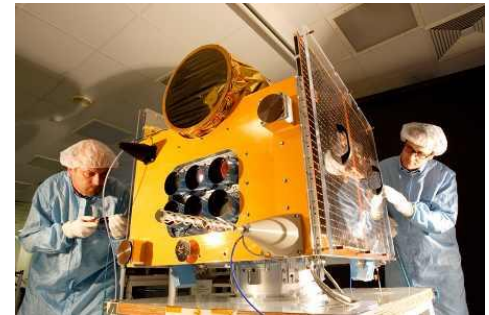
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- **Analysis**
  - Scientific Laws, Mathematical techniques,...
- **Experiments / Testing**
  - Measurements, Prototyping,...
- **Numerical (Computational) Modelling**
  - Computer simulations
- **Development of skills in:**
  - Problem solving
  - Communication
  - Team working



# Employability

- **Graduates enter a wide variety of careers:**
  - Engineering industries
  - Wide range of engineering disciplines
  - Further study/research
  - Non-engineering careers
- **Excellent reputation with employers, and rewarding salaries.**
  - Measurements, Prototyping,...





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