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ABERDEEN



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School of Engineering Mechanical Engineering

UNDERGRADUATE GUIDE



→ **1ST IN SCOTLAND
FOR GENERAL
ENGINEERING**

Complete University Guide 2024

Why Study Mechanical Engineering?

At Aberdeen, we believe that the world needs more mechanical engineers to help tackle some of the biggest issues of today, such as providing sustainable energy and intelligent transport systems, designing medical devices and developing machines and systems to increase food production or explore the outer frontier of space.

If you are interested in the mechanics and dynamics of movement, have an aptitude for and fascination with how things work, and want to contribute positively to sustainability and making people's lives better then you should consider mechanical engineering as a career choice.

Our teaching is supported by world-class facilities, including laboratories dedicated to particular areas of work such as satellite communications, computer -aided design, electrical machines, materials testing, laser welding, hydraulics and fluids, large structures and geotechnics.



Accreditation

Our degrees are accredited by the Engineering Council and are your first step towards achieving Chartered Engineer status with the Institution of Mechanical Engineers (IMechE).

Mechanical Engineering Degree Programmes

BEng (4 Years)

- BEng Mechanical Engineering
- BEng Mechanical Engineering with Oil and Gas Studies
- BEng Mechanical and Electrical Engineering

MEng (5 Years)

- MEng Mechanical Engineering
- MEng Mechanical Engineering with Biomechanics
- MEng Mechanical Engineering with Management
- MEng Mechanical Engineering with Subsea Technology
- MEng Mechanical and Electrical Engineering

Find out more at www.abdn.ac.uk/study

Industry Links and Employability

According to the Royal Academy of Engineering, Aberdeen is one of 13 engineering hot spots in the UK with over 8,000 engineering businesses across the city and surrounding region. The School of Engineering has strong links with industry, including local, national and international organisations, who support our teaching through guest lectures and seminars, placement opportunities, site visits and scholarships.

Student Societies

There are a number of societies directly related to mechanical engineering, where you can meet fellow students and develop your interests and new skills, including:

- Mechanical Engineering Society
- TAU Racing
- PrototAU
- Aerospace Engineering Society

You can learn more about the many engineering-related student societies at www.abdn.ac.uk/engineering



What You'll Study

This is an example course list for the four-year BEng and five-year MEng degrees in Mechanical Engineering. For full details of our various degree programmes, please refer to the relevant pages on our online prospectus at www.abdn.ac.uk/study

Year 1

- Principles of Electronics
- CAD and Communication in Engineering Practice
- Circuit Analysis and Design
- Engineering Mathematics 1
- Fundamentals of Engineering Materials
- Fundamental Engineering Mechanics

Year 2

- Fluid Mechanics and Thermodynamics
- Design and Computing in Engineering Practice
- Process Engineering
- Engineering Mathematics 2
- Electrical and Mechanical Systems
- Electronic Systems

Year 3

- Stress Analysis
- Engineering Materials
- Fluid Mechanics
- Dynamics 1
- Mechanics of Structures
- Engineering Thermodynamics
- Design of Mechanical Elements
- Engineering Analysis and Methods 1A
- The Engineer in Society

Year 4

- Fluid Dynamics
- Dynamics 2
- Heat and Momentum Transfer
- Nonlinear Solid Mechanics
- Group Design Project (BEng)
- Individual Project (MEng/BEng)

Year 5 (MEng only)

- Computational Fluid Dynamics
- Advanced Composite Materials
- Engineering Risk and Reliability Analysis
- MEng Group Design
- Three elective courses from a range of options



Dr Peter Dunning

Mechanical Engineering



I teach a course called Fundamentals of Engineering Materials, where students learn about how engineers use materials, and how they turn them into products and systems. This relates to my research on design optimisation, where I develop algorithms to design new materials (metamaterials) and efficient, lightweight structures, for example using composite materials.



Professor Alfred Akisanya

Personal Chair, Engineering

The opportunity to develop the knowledge and skills necessary for the development of a range of products and technologies that are of immense benefits to people and environment. The need for engineers has never been greater as we thrive towards a greener economy and net-zero emissions.

Our Interdisciplinary Approach

Professional engineers in today's world are required to work with colleagues from a range of engineering disciplines. All engineering students at the University of Aberdeen undertake studies from electrical and electronic, civil, chemical, mechanical and petroleum engineering during their first two years.

This ensures our graduates are experienced and knowledgeable about the various skills and challenges each discipline would face, making them excellent choices for any engineering team.

This approach also gives students flexibility in their degree - rather than being locked into a specific programme when applying, our students can choose the path that they prefer once they have experienced all five disciplines.

Careers

Mechanical Engineering graduates are employed in a wide range of industry sectors such as the manufacturing, energy,

construction, automotive, aerospace and medical industries. They are involved in the design, manufacturing, installation and commissioning of mechanical systems and new technologies, and in the safety and reliability assessment of engineering structures and components.

Recent graduate job roles have included:

- Design Engineer
- Graduate Mechanical Engineer
- Consultant Engineer
- Project Engineer
- Graduate Sustainability Engineer
- Engineering Manager
- Reliability Engineer

Recent graduates work at companies such as:

- Atkins
- BP
- Babcock
- BrewDog
- Cummins
- Jaguar Landrover
- Loganair
- Nissan
- Reliance Energy
- Subsea 7
- Wood Group
- UK Astronomy Technology Centre





Kate Kostick

BEng Mechanical Engineering



As someone who thrives on challenges and seeks continuous growth, I found the Mechanical Engineering degree program to be particularly apt. The courses offered a balance of complexity and diversity, yet they incorporated fundamental concepts effectively. Among the various aspects of the program, the Individual Project in the fourth year stood out as the most rewarding for me. It provided an opportunity to integrate and apply the knowledge and skills I had accumulated throughout my studies.



Kalyan Sai Nandan

MEng Mechanical Engineering




I found this subject interesting as I like dealing with mathematical relationships and solving physics problems because I am very analytically oriented. I've grown so much as a person since it is very easy to make quality friends here from all sorts of different places. The University has a friendly environment in general. Relating to this, the most interesting part of my time here so far is being part of various clubs and societies such as the badminton team and going to a lot of Indian Society events.




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