Lecturer in Civil or Mechanical Engineering

School of Engineering

Closing date: 04 March 2022
Interview date: To be confirmed
Reference number: ENG180A
INTRODUCTION

The School of Engineering at the University of Aberdeen is a research-intensive academic unit engaged in fundamental and applied research across five Engineering disciplines: Chemical, Civil, Electrical and Electronic, Mechanical, and Petroleum; with 102 academic, 20 technical and 15 admin staff. The School’s ambition is to be recognised as an international leader in engineering education, research and the application of knowledge to benefit society globally. The School is striving to establish itself as a partner of choice for world leading institutions.

Our Research

The School’s research spans the main engineering disciplines across five Research Groups and seven Research Centres (https://www.abdn.ac.uk/engineering/research/index.php) with over 100 PhD students. Within the 2021 REF period the Unit has increased substantially in size and in the scope of its research. The substantial growth was predicated by the School’s successful REF2014 outcome (85% of the School’s research output was ranked as world leading or internationally excellent) and its ability to respond to government, industry, and university research initiatives. The increase in size and expansion in research capability have enabled the School to make substantial research contributions that address major societal challenges: environmental sustainability, the circular economy, renewable energy infrastructure and technologies, decarbonisation, carbon capture and utilisation, and energy transition.

The School has engaged fully with Scottish Government initiatives aimed at accelerating technology developments within the energy industry. It is home to the Leverhulme Centre for Doctoral Training (CDT) in Sustainable Production of Chemicals and Materials, and leads the National Decommissioning Centre, which was established in 2019 to develop technologies and strategies for the economic and environmentally sensitive decommissioning of redundant offshore infrastructure. At the same time, new areas of research are emerging, supported by recent recruitment in Robotics, Bioengineering, Transport Studies and Energy Transition, which will frame the School’s research strategy for the coming period.

The main research activities related to Civil and Mechanical Engineering are conducted within the Fluid Mechanics, Applied Dynamics and Structures, and Solid Mechanics and Materials Research Groups. Current research covers a spectrum of activities across the following major areas: Environmental and Industrial Fluid Mechanics; Soil Mechanics; Structural Mechanics; Applied Dynamics and Solid Mechanics; and Transport Studies. Research in Environmental and Industrial Fluid Mechanics primarily focuses on (i) hydrodynamics of free-surface flows; (ii) mechanics of fluid-sediment interactions and transport; and (iii) thermophysical properties of fluids and metrology. These areas cover environmental and industrial flows at multiple scales, from sub-mm to kilometres. Studies of free-surface flows focus on open-channel flows, coastal processes, eco-hydraulics, flow-porous-bed interfaces, and liquid-solid impacts. Research on fluid-sediment interactions concentrates on sediment transport in unidirectional and oscillatory flows and on gravity currents. Current research in Soil Mechanics is focused on soil-structure interactions within two themes: (i) the dynamic behaviour of ground anchorage systems installed in soil or rock; and (ii) interactions between the seabed and bottom-moving objects (fishing gear or similar). Structures Research investigates fundamental and applied aspects of the design and analysis of structural systems, components, connections and materials, and evaluates the performance, condition and health of existing structural systems.

Our research in Applied Dynamics uses a combination of modelling and experiments to study the fundamental behaviour of dynamic systems to optimise design and performance. A major area of focus is on drilling technologies, covering bit-rock interactions, rock modelling, drill-string dynamics, and application of artificial intelligence and machine learning. Research in Engineering Materials covers analytical, computational and experimental work on composites and cellular materials, metals, alloys and additive manufacture aimed at understanding and predicting material behaviour from nano- to macro-scale. Safety & Reliability activities extend from reliability-based optimisation of materials to human reliability analysis for safe operation of large infrastructure. Engineering Optimisation develops new methods for aero-structure optimisation of aeroelastic wings and blades, and for the optimised design of hybrid renewable energy systems. The research on Decommissioning Technologies includes development of an underwater laser cutting tool, an underwater lifting system and a test chamber for well plugging and abandonment materials as well as data-driven decision support systems. Transport Studies are undertaken through the Centre for Transport Research (CTR) (www.abdn.ac.uk/ctr).
Our School is a General Engineering unit, with approximately 1000 undergraduate students spread across 5 years of study and 350 postgraduate taught students. We offer accredited undergraduate Master of Engineering (MEng, 5 years) and Bachelor of Engineering (BEng, 4 year) degrees in Chemical, Civil, Mechanical, Petroleum and Electrical and Electronic Engineering, and a range of advanced and specialist MSc programmes. In recent years, the School has diversified its teaching portfolio capitalising on the University investment into Strategic Posts (Robotics, Bioengineering, Transport Studies, Renewable Energy Engineering, Energy Transition). The highlight of 2020 was the successful renewal of the Accreditation of all our UG and PGT programmes put forward for accreditation (14 MEng, 10 BEng and 13 MSc programmes).

Our Mechanical Engineering is ranked #12 (out of 74) and Civil Engineering #13 (out of 58) in the UK according to the Complete University Guide 2022.

An inclusive working environment

The School and the University are committed to promoting and maintaining an inclusive and supportive working environment that assists all members of our University community to reach their full potential. Diversity brings strength and we welcome applications from all genders and protected characteristics across the international, national and regional communities that we work with and serve.

The School is proud to have been awarded the Athena SWAN Bronze Award for equality and diversity.

More information on the School is available by clicking on the link: www.abdn.ac.uk/engineering

JOB DESCRIPTION

MAIN PURPOSE OF THE ROLE:

A Lecturer position in Civil or Mechanical Engineering is available for an individual who will relish the opportunity to be part of a strong research team within the School of Engineering and also contribute to the development and delivery of new and existing undergraduate and postgraduate programmes. The appointee will be an individual with a clear ability for leading research in their fields, as evidenced by a track record of publications and funding commensurate with career stage. The appointee will have outstanding communication skills and developed plans for future research with good prospects for securing external funding.

We welcome applications from individuals with excellent research or technology commercialisation credentials in any area of Civil or Mechanical Engineering, including (but not restricted to) areas of current research strength of the School.

KEY RESPONSIBILITIES:

- Contribute to the advancement of the School’s research in Civil and Mechanical Engineering, generating high impact publications and significant research income through external grants;
- Contribute to the development and delivery of new and existing undergraduate and postgraduate programmes in Civil and Mechanical Engineering, including occasional teaching overseas.
- Develop collaborations with colleagues in the School of Engineering and, as appropriate, in other Schools (e.g. Natural and Computing Sciences, Biological Sciences, Geosciences);
- Contribute to School administration and, as appropriate, represent the School at university and external committees and activities.
- Actively promote the University and School of Engineering and contribute to wide-ranging outreach activities.
The successful applicant will have a proven track record of research, outstanding communication skills and the desire and ability to teach at undergraduate and postgraduate levels. A willingness and ability to develop new courses and contribute to the development of a new MSc programmes in Civil or Mechanical Engineering is essential, as is a willingness to teach overseas occasionally.

The appointee will have a PhD in a Civil/Mechanical Engineering subject area and will likely have significant experience as a post-doc or independent researcher. They will have research expertise and experience and interest in one or more of the currently maintained research strengths or in any other civil engineering field.

In order to further enhance its diversity, the School particularly welcomes applications from women who are currently underrepresented in the School.

TERMS OF APPOINTMENT

Salary will be at the appropriate point on the Grade 7, £41,526- £52,559 per annum and negotiable with placement according to qualifications and experience.

Any appointment will be made subject to satisfactory references and probation period.

For further information on various staff benefits and policies please visit www.abdn.ac.uk/staffnet/working-here

This role is based in the UK and as such the successful candidate will be required to live and work in the UK.

Should you require a visa to undertake employment in the UK you will be required to fulfil the minimum points criteria to be granted a Certificate of Sponsorship under the requirements of the Skilled Worker visa. At the time an offer of appointment is made, you will be asked to demonstrate that you fulfil the criteria in respect of qualification and competency in English. For research and academic posts, we will consider eligibility under the Global Talent visa.

Please do not hesitate to contact Patrycja Bromm, HR Adviser (e-mail: patrycja.bromm@abdn.ac.uk) for further information.

AT A GLANCE

SALARY:
Grade 7
£42,149- £50,296 per annum

HOURS OF WORK:
Full Time

CONTRACT TYPE:
Substantive

LOCATION:
Aberdeen
# PERSON SPECIFICATION

## Education/Qualifications

**Academic, technical and professional education and training**

- **PhD in Civil or Mechanical Engineering or a related Engineering disciplines**
- **Detailed knowledge of at least one main area of Civil/Mechanical Engineering as a result of advanced study and research.**
- **Chartered Engineer (CEng)**
- **Membership of a relevant professional institution (e.g. I MechE)**
- **Higher Education Academy (HEA) Diploma or equivalent**

## Work and Other relevant experience (including training)

**e.g. Specialist knowledge, levels of experience, supervisory experience, research**

- **Experience of University teaching and supervision of students at both undergraduate and postgraduate level.**
- **Demonstrable potential to perform leading research in their specialist area.**
- **Strong research profile with ability to develop and lead research projects (commensurate with career stage).**
- **Record of publications in peer-reviewed international journals (commensurate with career stage).**
- **Experience of applying for research funding and managing research (commensurate with career stage).**
- **Experience in the administration of academic affairs or similar experience in industry (commensurate with career stage).**
- **Prior experience of developing on campus and online postgraduate taught courses**
- **Experience of developing research-rich teaching materials and delivering research-informed teaching**
- **Experience of conducting interdisciplinary research**

## Personal qualities and abilities

**e.g. initiative, leadership, ability to work on own or with others, communication skills**

- **Excellent written, oral and presentation skills.**
- **Excellent skills to develop strong relationships with industry partners and/or with academics and researchers from other institutions.**
- **Ability and willingness to work in a multidisciplinary environment.**
- **Ability and willingness to engage in growing the market for the new MSc**

## Other

**e.g. special circumstances (if any) appropriate to the role such as unsocial hours, travelling, Gaelic language requirements etc.**

- **Ability and willingness to travel to national and international meetings and conferences and to deliver teaching at different locations including overseas.**
open to all and dedicated to the pursuit of truth in the service of others

The University of Aberdeen is a broad based, research intensive University, and we put students at the centre of everything we do. Outstanding in a wide range of discipline areas, Aberdeen is credited for its international reach and commercialisation of research ideas into spin out companies. The University has over 16,000 matriculated students and 3,600 staff representing 130 nationalities. We encourage bold thinking, creativity and innovation, and we nurture ambition with many opportunities for professional and personal development in an inclusive learning environment which challenges and inspires.

CURRENT CONTEXT

The University continues to build on its achievements. Underpinning our high performance and significant growth is a £100m investment in Aberdeen’s estate which will include the completion of a new Science Teaching Hub, the regeneration of the historic King’s Quarter and a new Business School building. The University has also invested in 50 new academic posts and in 2020 launched five interdisciplinary, cross-institution Research Centres that will catalyse world-leading research in our areas of strength. Our five Interdisciplinary Challenges are: Energy Transition; Social Inclusion and Cultural Diversity; Environment and Biodiversity; Data and Artificial Intelligence; and Health, Nutrition and Wellbeing.

ABERDEEN 2040

On our 525th anniversary as a University we launched Aberdeen 2040, our strategic vision for the next 20 years. Four strategic themes will shape our learning and discovery, underlined by 20 commitments we have made against each theme:

- **Inclusive**
  We welcome students, staff and partners from all backgrounds, organisations and communities. We value diversity.

- **Interdisciplinary**
  We innovate in education and research by generating, sharing and applying new kinds of knowledge. We learn together.

- **International**
  We connect with others and extend our networks and partnerships around the world. We think across borders.

- **Sustainable**
  We understand and nurture our environment, and take care of our resources, including our people and finances. We work responsibly.
OUR EDUCATION

Recognised as the Scottish University of the Year in the Times and Sunday Times Good University Guide 2019, we remain true to our roots as an ancient Scottish university, combining breadth and depth in our degree programmes and drawing strength from the quality of our research. Our flexible curriculum encourages students to grow as independent learners and therefore to thrive as graduates in the diverse workplaces of the future. Our education is open to all and we are setting ambitious targets to further widen access.

OUR RESEARCH

Researchers at the University of Aberdeen have been at the forefront of innovation and excellence throughout the centuries, generating insights in medicine, science, engineering, law, social sciences, arts and humanities. This research has contributed to five Nobel prizes as well as other awards such as the Queen’s Anniversary prize. Our research is intellectually rigorous working within our established areas of excellence as well as new methods of enquiry. We will continue to generate new knowledge addressing economic and societal issues with ambition and imagination, ensuring that it is globally excellent and locally relevant.

INTERNATIONAL

Aberdeen is increasing its international presence, positioning the University as a global organisation and building on established global partnerships in e.g. Qatar, China, North America, Europe. We feature in the top 50 institutions worldwide for international students¹ and have been named 32nd in the world for International Outlook². The University of Aberdeen is proud to be the first UK University to operate on a dedicated campus in Qatar. Phase 1 of this partnership with AFG College has successfully recruited over 600 students. Phase 2 will see the creation of a substantially larger campus, with capacity for at least 5,000 students and research activity. For further information on our Qatar campus visit www.abdn.ac.uk/qatar.

IMPACT

Our dedication to building a sustainable future is reflected in the Times Higher Education Impact Rankings 2021 where we were ranked in the top 60 Universities worldwide for positive impact on society. In 2020 the University signed the United Nations Sustainable Development Goals accord, solidifying our commitment to developing the world in a sustainable way. In 2021 we were listed in the global Top 50 for 6 of these goals and in the UK Top 20 for all 17³.

¹ Times Higher Education World University Rankings 2021
² QS World University Rankings 2021
³ Times Higher Education Impact Rankings 2021
ABERDEEN AND ABERDEENSHIRE

Scotland’s third largest city, Aberdeen sits on the coast between the mountains of Aberdeenshire and the stunning North Sea coastline. The Aberdeen City region is a can-do place that is actively investing, at scale, in its future.

Renowned as a Global Energy Hub, Aberdeen is a vibrant, entrepreneurial region, home to a unique mix of business opportunities and specialist skills across various sectors including energy, technology, life sciences and food & drink. More than 20% of Scotland’s top businesses are located in this region which is taking great strides to ensure that it continues to compete on a world stage. Investments of more than £10 billion of public and private infrastructure is due to be delivered before 2030, marking an exciting time to be part of a genuine world-class location.

Built from sparkling local granite Aberdeen has earned the name of the Silver City. As the energy capital of Europe, Aberdeen nevertheless retains its old-fashioned charm and character making it an attractive place in which to live, work and study. Due to its global business and international energy industry credentials, Aberdeen is well served by local and national transport infrastructure with excellent rail networks that run both North and South of Scotland and the rest of the UK. It also acts as an international travel hub. Flying time to London is just over one hour with regular daily flights and serves international travel to European centres such as Amsterdam (Schiphol) and Paris (Charles de-Gaulle) as well as flights to other European destinations.

The City and the surrounding countryside provide a variety of urban, seaside and country attractions. Aberdeen has first class amenities including His Majesty’s Theatre, Music Hall, Art Gallery, the P&J Arena, Museums, and Beach Leisure Centre. The City is framed by its accessible beach front which is within a short walk of the city centre and there are an array of activities available across the region such as hill walking; mountaineering; sailing; surfing; salmon, trout and sea fishing; golf; sailing; surfing and windsurfing. The surrounding countryside, known as Aberdeenshire, is also one of Scotland’s most appealing regions. Royal Deeside and the Cairngorms National Park are within easy access of the city, and there are a variety of towns and villages scattered along the coastline.

The city and the surrounding area have ranked consistently highly in nationally recognised quality of life surveys, coming out top 10 as one of the best places to live in Scotland in 2020 in the annual Bank of Scotland survey.

To find our more visit www.visitabdn.com
EQUALITY AND DIVERSITY

The University values a diverse working environment and recognises the benefits this can bring. The University is keen to receive applications from individuals from across all of the equality protected characteristics (age, disability, gender reassignment, marriage and civil partnership, pregnancy and maternity, race, religion or belief, sex, sexual orientation).

The University supports opportunities for flexible working for a range of reasons and has policies in place to facilitate this. The policies can be found at https://www.abdn.ac.uk/staffnet/working-here/flexible-working--5607.php.

The University’s commitment to gender equality has been recognised through the achievement of an Athena SWAN Bronze award at an institutional level and across all its subject areas. The University is also a Stonewall Diversity Champion to further LGBT+ equality.

The University is signed up to Advance HE’s Race Equality Charter, affirming the University’s commitment to the charter’s aim of improving the representation, progression and success of minority ethnic staff and students within higher education.

Candidates who are British Sign Language (BSL) users can contact us directly by using contact SCOTLAND-BSL.

The University is delighted to be accredited as a Disability Confident employer and strives to ensure that disabled staff and students have the opportunity to work and study in an inclusive, accessible and supportive environment.

www.abdn.ac.uk/staffnet/governance/equality-and-diversity-277

HOW TO APPLY

Online application forms are available at www.abdn.ac.uk/jobs

The closing date for receipt of applications is 04 March 2022

Should you wish to make an informal enquiry please contact:

Professor Ekaterina Pavlovskaia, Head of School
01224 272786
e.pavlovskaia@abdn.ac.uk

Please do not send application forms or CVs to Professor Pavlovskaia

Please quote reference number ENG180A on all correspondence