UNIVERSITY OF LEEDS

Faculty of Environment
School of Earth and Environment

Institute of Applied Geoscience

Lecturer in Applied Rock Mechanics and Rock Engineering

Fixed Term for 3 years, available from the 1 November 2016

The School of Earth and Environment is seeking to appoint a lecturer in Applied Rock Mechanics.

You would be joining a dynamic environment within the Engineering Geology, Rock Mechanics and Geotechnical Engineering grouping at the University of Leeds. You will be expected to undertake world class research in Engineering Geology with an emphasis on applied rock mechanics and rock engineering, and make a significant contribution to teaching at taught postgraduate and undergraduate level. Such commitments include the highly successful postgraduate taught MSc programme in Engineering Geology, as well as on undergraduate programmes in Geosciences. You will also be expected to engage in appropriate administrative duties, as directed by the Head of School.

You will have a PhD in Geosciences, Civil, Mechanical or Mining Engineering or a related cognate discipline, with an appropriate background in academic research or industrial practise in a relevant subject area. Additionally you will have evidence of leadership skills and the potential to teach effectively at all levels within higher education. Experience of field and laboratory characterisation approaches relevant to Applied Rock Mechanics and Rock Engineering research and teaching is desirable.

The University of Leeds' commitment to women in science has been recognised with a national accolade. The University has received the Athena SWAN Bronze Award and the Faculty of Environment holds the Athena SWAN Bronze Award in recognition of our success in recruiting, retaining and developing/promoting women in Science, Engineering and Technology (SET). We are proud of our commitment to equality and inclusiveness.

The University also offers family friendly policies including generous maternity and paternity leave; full details of the policies can be found here http://hr.leeds.ac.uk/homepage/4/policies.

University Grade 8 (£39,324- £46,924 p.a.)

Informal enquiries about the post may be directed to Dr Jared West, tel +44 (0)113 343 5253, email j.west@see.leeds.ac.uk, or to Dr Bill Murphy, tel +44 (0)113 343 5232 w.murphy@see.leeds.ac.uk

Closing Date: 17 October 2016

Ref: ENVEE1131

Click here for further information about working at the University of Leeds
www.leeds.ac.uk/info/20025/university_jobs

Job Description

Responsible to: **Head of School**
Reports: **Dr Jared West and Dr Bill Murphy**

Main duties and responsibilities

Research, Innovation and Impact

As a research scientist you will:

- Develop your own research area to international quality in a manner compatible with the Institute, School and Faculty strategies
- Carry out sustained innovative, independent and collaborative research that can translate into developments in industrial practice as well as high quality publications in international peer reviewed journals
- Attract funding for, recruit, and supervise PhD students
- Attract research funding consistent with conducting high quality applied scientific research, and to identify and exploit inter alia research council and other research funding
- Develop research and industrial links both within and external to the University, i.e. with industry, academic and public sector institutions to add to the international profile of the Institute for Applied Geoscience within the School of Earth and Environment
- Maintain an established track record in publishing scientific papers in high impact peer reviewed international journals, and presenting scientific results at international conferences
- Establish a successful externally-funded research programme
- Contribute to research planning and development within the School
- Contribute to the wider community, for example by journal editing, organising conferences, or being a member of a research council peer review college
- To participate in the activities of the relevant professional body (including the Geological Society, Institution of Civil Engineers and the Institute of Materials, Minerals and Mining as appropriate)
- To attract commercial opportunities for consulting that strengthen the impact of research activity

Student Education

You will be required to:

- Prepare and deliver both classroom and field-based teaching at both undergraduate and postgraduate levels
- Be fully involved in the assessment of course work and examinations and quality assurance of modules

- Develop links with professional practice to assist in delivery of the MSc Engineering Geology
- Engage in the teaching enhancement scheme, reflecting on your teaching to ensure that learning outcomes are met and module feedback is responded to
- Act as a personal and academic tutor
- Contribute to the review of course content, developing, designing and updating materials as appropriate
- Take a full role in curriculum development, and utilise innovative approaches to learning and teaching
- Assist in the design and supervision of undergraduate and MSc projects
- Take a role in module and programme leadership and management
- Undertake other teaching-related administrative duties as appropriate

Academic Leadership

You will be expected to undertake leadership duties as directed by the Head of School such as:

- Provide academic leadership with specialism in one or more of the following areas:
    - Applied Rock Mechanics and Rock Engineering
    - Engineering Geology
    - Geological engineering
- Contribute to the administrative process and the committee structures of the School of Earth & Environment, acting as part of a team to make key decisions
- Act as a mentor to colleagues with less experience, as required
- Establish a network of contacts to facilitate an exchange of ideas in research and teaching

General

- Carry out the duties of the post in accordance with the university values and standards, including the Leadership and Management Standard, and in line with university policies and procedures and local faculty/school benchmarks as appropriate
- Interact with colleagues and build good working relationships
- Be aware of and work in line with the university's learning and teaching partnership agreement and work with our students as members of a learning community to provide world class education and an excellent student experience
- Maintain your own continuing professional development

- Maintain a safe work environment, including ensuring compliance with legislation and the undertaking of risk assessments
- Any other duties as may reasonably be required, consistent with the grade of the post and as requested by the Head of School

University Values

All staff are expected to operate in line with the University's values and standards, which work as an integral part of our strategy and set out the principles of how we work together. More information about the University's strategy and values is available at http://www.leeds.ac.uk/comms/strategy/.

The School of Earth and Environment is a green impact award holder, and expects all staff to go about their duties in a resource efficient way, minimising impacts to the environment wherever possible.

Person Specification

Essential

- A PhD in Geosciences, Civil, Mechanical or Mining Engineering or a related cognate discipline, with an appropriate background in academic research or industrial practise in a relevant subject area
- A strong track record of research in appropriate areas of engineering geology and rock mechanics that has been published and well cited in international peer reviewed journals, or the potential to produce these
- Evidence of leadership skills, preferably in an interdisciplinary environment and a willingness to develop leadership both within the University and within the profession
- Potential to teach effectively at all levels within higher education
- Enthusiasm for all aspects of research, teaching and scholarship plus the ability to motivate staff and raise the profile of rock mechanics at University of Leeds
- Demonstrable team working skills and ability to work effectively in a team environment
- A track record of, or potential to develop research fund-raising, either individually or collaboratively from public and/or private sector sources
- Coherent plans for raising funds and developing research within the Institute for Applied Geoscience at Leeds
- A willingness and ability to take on administrative tasks when required

Desirable

- Experience of field and laboratory characterisation approaches relevant to Applied Rock Mechanics and Rock Engineering research and teaching
- Experience in characterisation of rock masses at depth (100m – 2 km), design of deep facilities, or integrating geological processes into engineering design
- Network of contacts within the rock engineering/engineering geological/geotechnical engineering professions
- Possession of either Chartered Geologist or Chartered Engineer status, or equivalent as appropriate to your specialism
- Experience relevant to research student supervision, either directly within academia or indicated by management of junior members of staff in professional practice

Note: Your personal profile could have been developed from an academic or industrial base or a combination of both.

Additional Information

The University offers generous terms and conditions of employment, a wide range of benefits, services, facilities and family friendly policies. Full details are available on the Human Resources web pages accessible at www.leeds.ac.uk/hr

The Partnership

The Partnership has been developed by students and staff and describes the mutual expectations of us all as members of the University of Leeds community. More information about the Partnership is available at http://partnership.leeds.ac.uk

Criminal Record Checks

This post is covered by the Rehabilitation of Offenders Act 1974 and as such, applicants who have 'unspent' convictions, cautions, reprimands and warnings, including any pending criminal proceedings, must declare this in the 'other personal details' section of the application form and send details to the Recruitment Officer at disclosure@leeds.ac.uk.

Criminal record information will be held securely by the University and in accordance with the Data Protection Act and the University's Data Protection policy, available at http://www.leeds.ac.uk/secretariat/data_protection_code_of_practice.html

Any offer of appointment will be in accordance with our policy, a copy of which is available at http://hr.leeds.ac.uk/criminal_records

Disabled Applicants

The post is located in the School of Earth and Environment. Disabled applicants wishing to review access to the building are invited to contact the department direct. Additional information may be sought from the Recruitment Officer, email disclosure@leeds.ac.uk or tel + 44 (0)113 343 1723.

Disabled applicants are not obliged to inform employers of their disability but will still be covered by the Equality Act once their disability becomes known.

Further Information

Rock Mechanics at the University of Leeds

Rock Mechanics aims to understand & predict the mechanical interactions of geological materials with natural and anthropogenic stressors. By nature this type of research aims to produce impacts on industrial practice. The University of Leeds has a strong track record in Rock Mechanics, Engineering Geology, and Hydrogeology (see Engineering Geology and Hydrogeology Research Group), with 6 academic staff engaged in research and teaching in this area, together with 12 PhD research students whose main affiliation is to this group. Existing research projects range from theoretical rock mechanics and geomechanical modelling, through to practical rock engineering, including applications of rock mechanics in volcanology, and characterization of fluid flow in fractured rock. A key developing theme is characterisation of rock masses at depth (100 m – 2 km), relevant to design of deep infrastructure facilities, typically with long design lives.

We host one of only three MSc courses in Engineering Geology in the UK, and have an excellent track record of placing graduates in employment. In addition, the School has strong groups in the related areas of Geomechanics and Petrophysics and Applied Geophysics. It also has geotechnical testing facilities, including compression and triaxial testing facilities, in addition to a wide range of field equipment, as well as state-of-the-art equipment for petrophysical characterisation in the Wolfson Laboratory (e.g. CT-scanner, permeability & multiphase flow laboratory, porosimetry & nuclear magnetic resonance). The School also possesses geophysical survey equipment, a full range of chemical analysis facilities, experimental sedimentology laboratories and an electron microscopy and electron microprobe. The Engineering Geology and Hydrogeology Research Group has strong links with other academic units at Leeds including the Geotechnical grouping within the School of Civil Engineering, with which we are in the process of formalising a new interdisciplinary unit: Ground@leeds. We have links with exisiting interdisciplinary units including the Institute for Resilient Infrastructure and Water@leeds.

The University of Leeds is one of the largest universities in Britain, with over thirty thousand students and more than six thousand staff, including over two thousand academic and academic-related staff. The University has departments in all major disciplines and is committed to developing a number of research areas as world class centres of excellence. This has involved identifying a number of `gold peaks' of high quality research and developing strategic investment initiatives for these areas to enable them to develop further. The University has recently invested over £25 million in a new and refurbished buildings for the School of Earth and Environment.

School of Earth and Environment

The School of Earth and Environment is established as one of the leading centres of international excellence across the Earth and Environmental Sciences. In the UK REF 2014, we ranked 5th out of 44 departments in the UK for overall research quality in Earth systems and environmental sciences. We have been rated as one of UK's top 2 centres for research power and 90% of our research has reached world leading and internationally excellent standards based on overall quality. The School

comprises ~120 academic staff and +100 postdoctoral researchers. In 2014/15 we attracted £14.6million in research funding and this figure is expected to exceed £21 million in 2019/20.

Institute of Applied Geosciences

The recently established Institute of Applied Geosciences promotes and supports world-class applied-facing research focused on energy, environmental and industrial applications of geoscience leading to high-quality publications, strong impact case studies, enhanced income, attraction and training of top-quality students, enhancement of research-led teaching for employment orientated UG and PG courses. IAG comprises a group of scientists researching fundamental geoscience with application and impact towards energy, environmental, industrial and infrastructural problems. IAG has a diverse research base, strong international profile and is highly multi-disciplinary. The institute comprises of five core research groups: Sedimentology Group, Geomechanics, Engineering and Petrophysics.

Earth Surface Science Institute

This is an institute of Earth science researchers with a broad range of expertise, focussed primarily on palaeoenvironmental reconstruction and palaeontology (Palaeo@Leeds Group), and geochemistry (Cohen Geochemistry Group). Research endeavours encompass the study of past and present environmental and climatic conditions and the processes that control them and produce change. Thus, we study deep-sea vent communities, quantify groundwater systems, model past episodes of climate change, constrain the chemistry of ancient oceans, assess the drivers of biological evolution and mass extinction, and much more! Work ranges across all scales from the microscopic study of mineral growth and weathering, to the global-scale study of elemental cycling in the oceans. The Institute also includes a strong group working on of contaminated land and groundwater who collaborate closely with colleagues in the new Institute of Applied Geosciences (see below) who have interests in Engineering Geology and Hydrogeology.

Institute of Geophysics and Tectonics

The Institute of Geophysics and Tectonics is dedicated to understanding the structure and evolution of the Earth and neighbouring planets. Detection and measurement of resources in the crustal layer and understanding of geological hazard also are principal aims. Measurement of gravity, magnetism, seismic waves and electrical properties, theoretical and computer modelling, surface structural mapping and petrological studies all contribute to these goals. Recently, in collaboration with the Faculty of Engineering, we have expanded applied research in petroleum engineering, seismology and structural geology.

The Institute for Climate and Atmospheric Science

ICAS has research interests covering; field, laboratory and modelling studies of dynamic meteorology; aerosols, microphysics and clouds; atmospheric chemistry on all scales; uncertainty and sensitivity analysis; and a recent strategic expansion into climate science and impacts. ICAS has over 40 current projects, funded by UK research councils, the European Commission, government, and industry. ICAS is a

member of the Met Office Academic Partnership, which enables close collaboration with Met Office staff and research programmes. The National Centre for Atmospheric Science (NCAS) is also located in Leeds, which enables close collaboration with several NCAS research staff with expertise in atmospheric measurements and models.

The Sustainability Research Institute

The Sustainability Research Institute (SRI) conducts inter-disciplinary research on the different dimensions of sustainability. Research within SRI is based largely on the environmental social sciences and draws upon aspects of geography, sociology, politics, planning, economics, management, development studies and science and technology studies. Its broader activities combine social and natural sciences in leading-edge, interdisciplinary research. SRI has received significant research funding from various sources, including the recent award of £5.5 million from the ESRC to establish the Centre for Climate Change Economics and Policy (in partnership with the LSE). As well as being a centre of excellence for inter-disciplinary research, SRI runs a range of postgraduate and undergraduate programmes on the different dimensions of sustainability.

Research Laboratory Facilities

The School of Earth and Environment has recently invested in newly commissioned geochemical and atmospheric science laboratories as part of the new build. These world class research facilities embrace all aspects of earth and environmental science including atmospheric instrument and chemistry labs, laser facilities, geomicrobiology-, geochemistry instrument-, isotope geochemistry-, hydrochemistry-, clean- and radiochemistry- labs. Further, the co-location of these facilities in the new School facilitates access to a wide range of analytical services including ICPMS, XRD, IC and isotope analysis.