

Lecturer in Structural Engineering (Structural Health Monitoring and intelligent infrastructure)

Department	Civil and Environmental Engineering (www.strath.ac.uk/engineering/civilenvironmentalengineering/)		
Faculty	Faculty of Engineering (www.strath.ac.uk/engineering/)		
Staff Category	Academic	Reference No	636539
Reports To	Head of Department	Grade:	8
Salary Range:	£45585 - £56021	Contract Type:	Open Contract
FTE	I (35 hours/week)	Closing Date	02/09/2024

Job Advert

The Department of Civil and Environmental Engineering (CEE), University of Strathclyde, is seeking to appoint a Lecturer in Structural Engineering and Structural Health Monitoring to strengthen our Centre for Intelligent Infrastructure (CII).

As civil infrastructure becomes increasingly sophisticated and interconnected, the demand for experts in Structural Engineering and Structural Health Monitoring (SHM) has never been higher. Most of the infrastructure by 2050 will be adaptations of current structures, not new builds. The Centre for Intelligent Infrastructure recognizes that this shift demands a profound transformation in monitoring, maintenance, and refurbishment practices. SHM provides a proactive approach to infrastructure management by integrating real-time data and sensor technologies. This not only ensures safety and performance but aligns with sustainability goals by optimizing maintenance and minimizing environmental impact.

The envisioned role of Lecturer in Structural Engineering and SHM aligns with the objectives and expertise housed within the Centre for Intelligent Infrastructure (CII). The CII, established in 2015, serves as the epicentre for transformative research in civil engineering, focusing on pioneering technologies that redefine the landscape of infrastructure development and management with strong emphasis on digital technologies for improving the environmental sustainability and climate resilience of new and existing infrastructure. At the heart of the university's strategy is a commitment to innovation and technological advancement, supported by priority areas of Social and Environmental Sustainability and Process, Systems and Digital. Structural health monitoring and intelligent systems represent some of the most prominent technology required to develop climate resilient infrastructures and maximise the sustainability of the built environment. The lecturer, by advancing research in these areas, directly contributes to the university's reputation as a hub for cutting-edge technologies and innovative solutions to maximise social benefit and improve the sustainability of existing structures.

The successful candidate will hold a Ph.D. in civil engineering or related fields. Their academic background will reflect a deep understanding of SHM and structural behaviour under operational and extreme loading conditions. This expertise is not only a prerequisite for effective teaching but positions the candidate as a thought leader in a critical and evolving field. The ideal candidate will demonstrate an active research agenda in structural health monitoring, or other relevant technologies which may encompass sensors and robotics for civil engineering, Artificial Intelligent (AI), and other emerging technologies, showcasing a track record of publications in reputable journals and conferences. The nature of civil engineering challenges often requires interdisciplinary solutions. The candidate should have a proven ability to collaborate with experts in related fields, including but not limited to digital twin technologies, risk and uncertainty modelling, artificial intelligence and machine

learning, earthquake engineering, and material science. Their collaborative spirit should extend beyond the department, fostering connections with researchers across the university.

The ideal candidate will possess a passion for teaching and an ability to deliver high-quality education at both undergraduate and postgraduate levels. They should be prepared to contribute to core structural engineering modules, integrating practical applications such as SHM into the curriculum.

Given the international focus of our department and the emphasis on global engagement, the candidate should express a willingness and enthusiasm for teaching in our international programs. This includes contributing to established collaborations, such as the IJEP program with Yunnan University, China, and potentially developing new modules that align with global educational needs.

A crucial aspect of the role involves securing research funding to support innovative projects. The ideal candidate will have knowledge of the UK funding landscape, including major research councils and industry-specific grants. They should demonstrate an ability to act as Principal Investigator or Co-Investigator on successful proposals, contributing to the financial sustainability of their research initiatives.

The Faculty of Engineering at the University of Strathclyde is one of the largest and most successful engineering faculties in the UK, and the largest in Scotland. As a leading international technological university, Strathclyde is recognised for its world class research, knowledge exchange and educational programs. At the heart of this is the Faculty of Engineering which boasts a growing research portfolio of over £85 million. The Department of Civil and Environmental Engineering (CEE) is one of the largest and most successful civil engineering departments in Scotland with over 600 students, including 450 undergraduates, 100 taught postgraduates and almost 100 registered research students. We have a strong commitment to widening access and inclusion while maintaining academic quality and an outstanding student experience.

Job Description

Brief Outline of Job:

The postholder will consolidate and enhance the ongoing research within the Centre for Intelligent Infrastructure and will help in positioning CEE-Strathclyde among the top UK Civil Engineering Departments. It will support our ambition to innovate approaches in structural engineering so that we play a key role in targeting Net-Zero and improving the infrastructure resilience via innovative approaches including but not limited to innovative structures (e.g. self-healing structures, bio-inspired solutions), advanced sensing technology for structural health monitoring, strategies and digital twins for supporting the design, monitoring and maintenance of critical infrastructure.

Structural Engineering is a core component of an accredited Civil Engineering and Civil and Environmental Engineering degree. The postholder will contribute to curriculum development within the degree programmes, and will enhance the student experience, maintaining our high National Student Survey (NSS) scores.

The postholder will ensure we have appropriate capacity to drive robust overseas student recruitment, contributing to the teaching to our increasing number MSc's students. The successful candidate will also contribute to the design and organisation of innovative curricula and syllabuses in structural engineering, contribute to management of the Department and the Centre as requested by the Head of Department, promote knowledge transfer of research in structural engineering that has the potential to provide impact within the civil engineering sector.

Main Activities/Responsibilities:

1.	Engage in individual and collaborative research of international excellence in structural engineering, establishing a distinctive programme of research.
2.	Disseminate results through regular publications in high impact journals, books and conference proceedings.
3.	Secure, as Principal- or Co-Investigator, to appropriate external bodies for research funding and manage grants awarded.
4.	Design and deliver teaching in structural engineering at undergraduate and postgraduate levels, including contribution to curriculum review and enhancement, in a manner that supports a research-led approach to student learning.
5.	Supervise research students and staff as required, providing direction, support and guidance.
6.	Undertake student assessment and examination activities, including the provision of appropriate feedback to students.
7.	Develop knowledge exchange activities by, for example, establishing research and/or educational links with industry and influencing public policy and the professions
8.	Contribute to the development of the Centre for Intelligent Infrastructure.

9	Undertake necessary administrative and management functions, for example through membership of committees and/or by acting as class/module/year co-ordinator as required by the Department, Faculty and/or University.
10	Engage in continuous professional development.
11	Comply with and promote the University's Health, Safety & Environment, Equality, Diversity & Inclusion, and Welfare & Safeguarding Policies at all times.

Person Specification

Educational and/or Professional Qualifications

(E=Essential, i.e. a candidate must meet all essential criteria to be considered for selection, D=Desirable)

E1 PhD degree (or equivalent professional experience) in Civil Engineering or related discipline.

Experience

E2 A body of published research in journals and conferences.

E3 Relevant research experience and interests

D1 Experience and involvement in international research activities

E4 Knowledge of research landscape in Europe

E5 Ability to work in an international environment

E6 Ability of delivering high quality undergraduate and postgraduate teaching, supervision and examining (including in virtual/online mode).

Job Related Skills and Achievements

E7 Ability to work within a team environment and lead teams where required

E8 Ability to secure research funding, including experience of contributing to grant applications

E9 Ability to work on collaborative projects within large networks with multiple partners.

D2 Track record of securing research funding

D3 Track record in knowledge exchange related activities

Personal Attributes

E10 Excellent interpersonal and communication skills, with the ability to listen, engage and persuade, and to present complex information in an accessible way to a range of audiences.

E11 Effective and efficient approach to professional practice

E12 Flexibility in responding to the future needs of the Department and the Centre for Intelligent Infrastructure

Other Relevant Factors

D4 Secondment at international organisations

Application Procedure

Applicants are required to complete an application form including the name of three referees who will be contacted without further permission, unless you indicate you would prefer otherwise. Applicants should also submit a Curriculum Vitae and a covering letter detailing the knowledge, skills and experience you think make you the right candidate for the job as well as a Research Plan outlining your research strategy for the next 5 years. Applicants should also complete the Equal Opportunities Monitoring Form.

Other Information

Further information on the application process and working at Strathclyde can be found on our website (<http://www.strath.ac.uk/hr/workforum>).

Informal enquiries about the post can be directed to Prof. Edoardo Patelli (Edoardo.patelli@strath.ac.uk) and Dr. Enrico Tubaldi (enrico.tubaldi@strath.ac.uk)

Conditions of Employment

Conditions of employment relating to the Research staff category can be found at: [Conditions of Employment](#).

Rewards and Benefits

Our staff have access to a wide range of outstanding benefits that include financial rewards, family friendly and wellbeing benefits and career development opportunities, details of which can be found [here](#).

Basic Disclosure

This role requires the satisfactory outcome of a Basic Disclosure Scotland Check. The successful applicant will be asked to carry out a Basic Disclosure Scotland Check. Whether an outcome is satisfactory will be determined by the University.

Probation

Where applicable, the successful applicant will be required to serve a 12 month probationary period.

Pension

The successful applicant will be eligible to join the Universities' Superannuation Scheme. Further information regarding this scheme is available from [Payroll and Pensions](#).

Interviews

Formal interviews for this post will be held on 20/09/2024.

Equality and Diversity

The University of Strathclyde is a socially progressive institution that strives to ensure equality of opportunity and celebrates the diversity of its student and staff community. Strathclyde is people-oriented and collaborative, offering a supportive and flexible working culture with a deep commitment to our equality, diversity and inclusion charters, initiatives, groups and networks.

We strongly encourage applications from Black, Asian and minority ethnicity, women, LGBT+, and disabled candidates and candidates from lower socio-economic groups and care-experienced backgrounds.

University Values

The University's Values capture what we're all about: who we are, what we believe in and what we stand for. [Our Values](#) have been derived from how we act and how we expect to be treated as part of Strathclyde.

