

Candidate Information

Position: Lecturer in Computational Hydraulics
School/Department: Environmental Change and Resilience
Reference: 21/109323
Closing Date: Thursday 11 November 2021
Salary: £37,467 - £51,799 per annum.
Anticipated Interview Date: Week commencing 6 December 2021

Job Purpose:

To undertake research in line with the research strategy and targets of the Civil Engineering Discipline within The School of Natural and Built Environment, The Faculty of Engineering and Physical Science (EPS) and in line with the Queen's University's vision of world class leadership and impact on society. Emphasis will be placed on the areas of Hydraulics, with the specialism of the use of computational fluid dynamics as a research and educational tool. The teaching and research undertaken will complement and enhance the existing Hydraulics group and the discipline overall. To teach at undergraduate and/or postgraduate level in topics that also may include generic coding and basic civil engineering principles. To contribute to the continuous improvement of curriculum content, student employability and widening the overall student experience through interdisciplinary projects. The successful candidate is expected to become a member of one of the professional accrediting institutions for our degree programmes.

Main Activities & Responsibilities

Education (40%-60% of time spent):

1. Utilise a range of teaching methods in the design and delivery of teaching and assessment activities in Civil Engineering, which enhance student employability and reflect industry skill requirements.
2. Develop approaches to teaching and learning, which are appropriate for the subject area.
3. To contribute to the development of a variety of innovative teaching programmes associated to the subject specialism.
4. Supervise student research projects which may involve an extensive range of topic areas both inside and outside the post-holder's own specialist area.
5. Align personal research objectives to ensure the development of research led teaching reflecting emerging practices and techniques. Design/update modules in line with School's teaching strategy and the development plans for the CPM and BIM programmes.
6. Manage all resources required to deliver a quality educational student experience and contribute to the University's international reputation and collaborations.

Research (20%-30% of time spent):

1. Conduct research in areas of Computational Hydraulics that complement and enhance the Hydraulics Group within the discipline, sustaining a personal research plan by managing and undertaking research activities leading to a REF return in Engineering.
2. Sustain a high-quality publication record by publishing in refereed journals and presenting at conferences to assist individual research to enhance the School's international research profile.
3. Develop research proposals and funding bids, in collaboration with others as appropriate.
4. Assist with building, supervising and sustaining a construction and project management research group within the School.
5. Direct, coach and develop research staff, where appropriate.
6. Ensure that research projects are completed on time and within budget.
7. Develop networks of research excellence both nationally and internationally.

Leadership and Administration (10%-20% of time spent):

1. Contribute to the School's outreach strategy by developing external links.

2. Develop links with relevant industries or external bodies to encourage technology transfer opportunities and create opportunities for future research projects.
3. Provide pastoral care for students within own area to ensure, as far as practicable, that all relevant issues are dealt with in a timely, sympathetic and effective manner, including as Personal Academic Tutor.
4. Carry out designated School functions, including, for example, participation in committee work, assisting in the process of admissions, preparation of submission for teaching quality assessment or the REF.
5. Mentor colleagues to share expertise and experience.

Essential Criteria:

1. Hold or be about to obtain a PhD in Civil Engineering within the specialist area of Hydraulics or Marine Engineering.
2. Hold a 2:1 or higher, equivalent in an engineering discipline.
3. Evidence of potential to deliver high quality teaching in engineering related subjects at undergraduate or postgraduate level through the medium of English.
4. A strong record of publications, commensurate with career stage, in the Hydraulics / Computational field in peer reviewed/refereed journals that are REF returnable within the Engineering Unit of Assessment.
5. Provide a history, commensurate with career stage, of applying for and obtaining peer reviewed research income from research councils and other relevant funding bodies.
6. Experience of using Matlab and OpenFOAM.
7. Present their vision to strengthening the international excellence in research at the School of Natural and Built Environment and to developing collaborative.
8. High level of analytical capability.
9. Evidence of collaboration with and links to industry, or other activities aiming at achieving broader societal and economic impact.
10. Evidence of social engagement and outreach activities.
11. Developed English Language skills sufficient to relay complex information in English both orally and in writing.
12. Demonstrable intellectual ability and good time management.

Desirable Criteria:

1. Completed PGCHET or an equivalent teaching qualification.
2. Subjects that include a high hydraulics content with computational aspects.
3. Experience of teaching Mathematics in tertiary level education.
4. Supervision of project work using Computational methodologies as the prime investigation tool.
5. Evidence of good teaching evaluations.
6. Experience in design of new modules and/or assessment methods.
7. A record of publications in relevant high SNIP journals.
8. A record of successful grant applications.
9. Successful supervision of PhD or Masters students.
10. Evidence of successful research collaboration, participation in collaborative networks or research teams.
11. Evidence of the successful adaption of CFD to solving a range of engineering research problems.
12. Evidence of CFD expertise being more widely used by industry.
13. Plenary or invited talks at international conferences.
14. Evidence for developing and maintaining an independent research programme.
15. Measurable societal and economic impact such as contribution to industry roadmaps and technology transfer to industry, with associated evidence.