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| Last updated: | April 2023 |

**JOB DESCRIPTION**

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| Post title: | **Associate Professor – Advanced X-ray Computer Tomography (XCT) Systems and Applications** | | |
| Standard Occupation Code: (UKVI SOC CODE) | 2311- Higher education teaching professional | | |
| School/Department: | Engineering/Mechanical Engineering/Bioengineering Sciences | | |
| Faculty: | Faculty of Engineering and Physical Sciences (FEPS) | | |
| Career Pathway: | Education, Research and Enterprise (ERE) | Level: | 6 |
| \*ERE category: | Balanced portfolio | | |
| Posts responsible to: | Head of Bioengineering Sciences | | |
| Posts responsible for: | Research staff | | |
| Post base: | Office-based | | |

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| Job purpose |
| To undertake research in line with the School/Department research strategy, to teach at undergraduate and postgraduate level, and to undertake leadership, management and engagement activities.   To develop scholarship, research and enterprise in line with the Faculty’s research strategy to support teaching within a research led environment at undergraduate and postgraduate level.  In education the ability to develop and deliver a range of innovative teaching and assessment approaches. |

| Key accountabilities/primary responsibilities | | % Time |
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|  | Plan and coordinate an interdisciplinary research programme in the area of **Advanced X-ray Computer Tomography (XCT) Systems and Applications**. Act as principal investigator on projects, responsible for defining original research objectives, developing and managing staff, and attracting funding through bids and reputation. Develop and oversee the application of innovative and creative research methodologies and techniques that add to the knowledge and understanding of the subject area. | 40 % |
|  | Develop and sustain a national and international reputation for research and the enhancement of learning and teaching practice by the regular dissemination and explanation of findings through leading peer-reviewed publications, major conferences, or exhibiting work at other appropriate events. Engage in external academic activities in accordance with the School/Department research strategy and which enhance the School/Department national/international research profile, e.g. membership of committees of academic bodies, external examining, journal editorships, etc. |
|  | Manage administrative tasks associated with specified research funding, including risk assessment of programme activities, leading project meetings and preparation of annual reports. Management of procedures required to ensure accurate and timely formal reporting and financial control. |
|  | Contribute to the development of teaching and learning activities of the School/Department. Deliver teaching of the highest quality across a range of modules and to all levels, through lectures, tutorials, practicals and seminars.  Directly supervise undergraduate students (Individual Projects and Group Design Projects), postgraduate students (MSc Research Projects, MPhil/PhD projects, | 40 % |
|  | Take responsibility for overseeing, developing and promoting fresh teaching and learning approaches and material, which create interest, understanding and enthusiasm amongst students. Directly supervise students, providing expert advice on learning best practice and helping with learning problems. Identify the learning needs of students and define learning objectives. Promote the use of appropriate media to support student learning. Set and mark coursework and exams, providing constructive feedback to students. |
|  | Design, develop and deliver an innovative range of programmes and study, sometimes for entirely new courses at various levels. Take responsibility for the quality of the design of existing courses and programmes, continually monitoring, evaluating and revising them to ensure excellence and coherence, identifying areas where current provision is in need of revision or improvement. |
|  | Contribute to the development of research, teaching and learning strategies in the School/Department. |
|  | Provide expert advice and subject leadership to other staff and students, including research supervision. |
|  | Take on appropriate School/Department coordinating roles to advance student academic development, e.g. act as Senior Tutor, Head of Teaching Programme, Coordinator of Programmes at undergraduate or postgraduate levels, etc. | 15 % |
|  | Represent the School/Department/Faculty/University in the disciplinary community externally. |
|  | Any other duties as allocated by the line manager following consultation with the post holder. | 5 % |

| Internal and external relationships |
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| Member of the School/Department Board, Examination Board and of such School/Department committees relevant to their administrative duties.  The post holder will take a leading role in the setting of strategic objectives for the research theme of which they are a member.  Teaching and administrative duties will be allocated by the Head of School/Department, within the context of the teaching programmes agreed by the School/Department Learning and Teaching Committee. |

| Special Requirements |
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| To attend national and international conferences for the purpose of disseminating research results.  To be available to participate in residential fieldwork, in the UK or overseas, according to own area of subject specialism. A normal expectation would be of one such course per annum. |

**PERSON SPECIFICATION**

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| Criteria | Essential | Desirable | How to be assessed |
| Qualifications, knowledge and experience | PhD or equivalent professional qualifications and experience in X-ray imaging, engineering, physical sciences, biological imaging or related subjects.  Teaching qualification (e.g. PGCAP or equivalent/ equivalent experience)  Well-established national and international reputation in Advanced X-ray Computer Tomography (XCT) Systems and Applications with an emphasis on biomedical applications  Extensive track record of teaching at undergraduate and postgraduate level. Extensive track record of developing and disseminating successful learning approaches  Extensive track record of published research | Experience in: Micro-focus XCT system development; Correlative imaging; Advanced image processing (e.g. reconstruction, automated feature extraction); Use of the above for a wide range of biological and medical application  Membership of Higher Education Academy.  Involvement in national and international events | CV. |
| Planning and organising | Proven ability to plan and shape the direction of an area of research and teaching activity, ensuring plans complement broader research and education strategy  Proven ability to develop innovative research proposals and attract research funding  Proven ability to plan, manage, organise and assess own teaching contributions.  Proven ability in the design of course units, curriculum development and new teaching approaches in the School/Department, taking primary responsibility for their quality  Able to contribute to the development of research and teaching policy within the School/Department | Able to build research/teaching teams | Presentation,  Interview,  CV. |
| Problem solving and initiative | Able to develop significant new concepts and original ideas within own field in response to intractable issues of importance to the research area |  | Interview |
| Management and teamwork | Able to mentor, manage, motivate and coordinate teaching/research teams, delegating effectively. Able to resolve performance issues and formulate staff development plans, where appropriate, to ensure team aims are met  Proven ability to manage and deliver own course units and team-taught course units  Proven ability to coach, advise and support others (staff and students) on learning and teaching issues.  Able to foster and develop good relationships between own School/Department and the rest of the university. Able to work proactively with senior colleagues to develop cross-School/Department and institution cooperation and effectiveness  Able to contribute to the running of the School/Department by managing significant School/Department processes  Able to monitor and manage resources and budgets  Work effectively in a team, understanding the strengths and weaknesses of others to help teamwork development |  | Interview. |
| Communicating and influencing | Communicate new and complex information effectively, both verbally and in writing, engaging the interest and enthusiasm of the target audience  Extensive track record of presenting research results at group meetings and conferences  Extensive track record of delivering lectures and seminars in courses relating to different aspects of (subject area)  Able to engage counselling skills and pastoral care, where appropriate  Able to persuade and influence at all levels in order to foster and maintain relationships, resolving tensions/difficulties as they arise  Able to provide expert guidance to colleagues in own team, other work areas and institutions to develop understanding and resolve complex problems  Able to negotiate for the School/Department on key issues  Able to develop and lead key communications strategies |  | Presentation,  Interview,  CV. |
| Other skills and behaviours | Compliance with relevant Health & Safety issues  Proactive in promoting a working environment that is inclusive and engaging; recognising the value diversity brings. |  | Interview. |
| Special requirements | Able to attend national and international conferences to present research results |  | Interview. |

**JOB HAZARD ANALYSIS**

**Is this an office-based post?**

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| Yes | If this post is an office-based job with routine office hazards (eg: use of VDU), no further information needs to be supplied. Do not complete the section below. |
| No | If this post is not office-based or has some hazards other than routine office (eg: more than use of VDU) please complete the analysis below.  Hiring managers are asked to complete this section as accurately as possible to ensure the safety of the post-holder. |

## - HR will send a full PEHQ to all applicants for this position. Please note, if full health clearance is required for a role, this will apply to all individuals, including existing members of staff.

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| **ENVIRONMENTAL EXPOSURES** | **Occasionally**  (<30% of time) | **Frequently**  (30-60% of time) | **Constantly**  (> 60% of time) |
| Outside work |  |  |  |
| Extremes of temperature (eg: fridge/ furnace) |  |  |  |
| ## Potential for exposure to body fluids |  |  |  |
| ## Noise (greater than 80 dba - 8 hrs twa) |  |  |  |
| ## Exposure to hazardous substances (eg: solvents, liquids, dust, fumes, biohazards). Specify below: |  |  |  |
| Frequent hand washing |  |  |  |
| Ionising radiation |  |  |  |
| **EQUIPMENT/TOOLS/MACHINES USED** | | | |
| ## Food handling |  |  |  |
| ## Driving university vehicles(eg: car/van/LGV/PCV) |  |  |  |
| ## Use of latex gloves (prohibited unless specific clinical necessity) |  |  |  |
| ## Vibrating tools (eg: strimmers, hammer drill, lawnmowers) |  |  |  |
| **PHYSICAL ABILITIES** | | | |
| Load manual handling |  |  |  |
| Repetitive crouching/kneeling/stooping |  |  |  |
| Repetitive pulling/pushing |  |  |  |
| Repetitive lifting |  |  |  |
| Standing for prolonged periods |  |  |  |
| Repetitive climbing (ie: steps, stools, ladders, stairs) |  |  |  |
| Fine motor grips (eg: pipetting) |  |  |  |
| Gross motor grips |  |  |  |
| Repetitive reaching below shoulder height |  |  |  |
| Repetitive reaching at shoulder height |  |  |  |
| Repetitive reaching above shoulder height |  |  |  |
| **PSYCHOSOCIAL ISSUES** | | | |
| Face to face contact with public |  |  |  |
| Lone working |  |  |  |
| ## Shift work/night work/on call duties |  |  |  |