Professor of Engineering
School of Physics, Engineering and Technology

Closing date: 16 January 2022
Interview date: 11 February 2022
Vacancy reference: 10191
INTRODUCTION

The University of York has established the School of Physics, Engineering and Technology that bring together existing strengths in the departments of Electronic Engineering and Physics and allows expansion into new areas. This expansion includes establishing new research and teaching activity in the broader discipline of Engineering.

The University of York invites applications for a Professor of Engineering to lead the development of this new engineering research and teaching initiative. A lectureship post associated with this professorial appointment will be made available for the successful candidate.

Underpinned by our long standing expertise in Electronic Engineering, we are currently expanding and diversifying our research and teaching across the broader discipline of Engineering. At this exciting time, we seek exceptional academics to provide strategic leadership and vision to drive these ambitious plans and to develop new research, enterprise, and teaching initiatives, with University support for new facilities and further staff appointments over the next 5 years.

The successful candidate will have an outstanding research record that is internationally recognised and supported by collaborations with academic and non-academic partners both in the UK and internationally.

The post-holder will be expected to pursue research of the highest standards, attracting external funding to support our research and innovation activities, contributing towards our aspirational REF objectives. We particularly welcome applications from candidates with expertise in Robotic & Autonomous Systems, Mechanical Engineering and Materials Science & Engineering to complement and enhance existing areas of research strength. Our professors are also expected to provide inspirational academic leadership in teaching and curriculum development.

The successful post-holder will have the opportunity to work with colleagues across the School and access to well-equipped facilities, including the Robotics, Bio-inspired Architectures, Microengineering & Microfluidics, York-Jeol Nanocentre and Medical Engineering Laboratories.

Professor Andy Tyrrell
Head of Department, Electronic Engineering
Main purpose of the role

Professors at York are expected to provide academic leadership to advance their subject nationally and internationally, and to contribute to maintaining the University as an international centre of excellence for their subject area through research, scholarship, teaching and innovation.

We are currently seeking applicants who will excel in all aspects of academic practice during this new and exciting phase of growth and development of Engineering at York. Successful candidates will (i) undertake world leading research in an engineering discipline, we particularly encourage applicants with expertise in Robotic & Autonomous Systems, Mechanical Engineering or Materials Science & Engineering, and will engage in wide-ranging collaborations within and beyond the School, including supporting and mentoring early career researchers and postgraduate students; (ii) contribute to the academic leadership of the School and University; (iii) with colleagues, support the continued development of teaching programmes in Engineering; (iv) work at a senior level with external organisations to generate the highest research impact and deliver continuing professional development; (v) engage actively with School and University members to help create a distinctive and positive working environment that emphasises excellence.

Key responsibilities

(Role holders will be required to undertake some or all of the duties below)

To support the research activities of the School

- To carry out internationally outstanding research, scholarship and innovation
- To disseminate research through monographs, articles in journals of international standing, and other appropriate forms, including national and international conference presentations
- To play a leading role in the School in identifying and securing external funding through research grants and contracts, and in developing collaborative research income-generating activities
- To play a leading role in the translation of research towards and into commercial outcomes
- To attract and supervise research students, and, as appropriate, post-doctoral researchers and other support staff
- To support, comply with, and contribute fully to research plans and policies of the School and the University
- To support and mentor junior academic colleagues in order to promote quality of teaching and research and their career development

To support the teaching objectives of the School

- To design and be responsible for delivery of modules and teaching programmes for undergraduate and graduate students
- To play a leading role in School and interdepartmental curriculum development and quality enhancement
- To coordinate team teaching, as required, including liaison with other staff and with postgraduates who teach
JOB DESCRIPTION

• To design and mark assessments, and give feedback
• To supervise undergraduate and graduate projects and dissertations
• To carry out teaching in Continuing Professional Development
• To undertake pastoral support of students, as a personal supervisor or in another designated role
• To support and promote fully the University and School teaching quality assurance standards and procedures

To contribute to the efficient management and administration of the School

• To make an important contribution to the leadership and management of the School, including supporting early career staff and developing new collaborative initiatives
• To attend departmental meetings, meetings of the Board of Studies, and other committees and working groups within the School and University
• To carry out relevant professional duties, commensurate with the Professorial grade
• To undertake specific departmental roles and management functions as may be reasonably required by the Head of School
# PERSON SPECIFICATION

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<thead>
<tr>
<th>Qualifications</th>
<th>Essential / Desirable</th>
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<tbody>
<tr>
<td>PhD in Engineering or a related discipline</td>
<td>Essential</td>
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<td>Membership of appropriate professional societies (e.g. IET, IMechEng)</td>
<td>Essential</td>
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<td>Undergraduate degree in Mechanical Engineering or a related discipline</td>
<td>Essential</td>
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<tr>
<th>Knowledge</th>
<th>Essential / Desirable</th>
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<tr>
<td>Outstanding and internationally recognised knowledge in area of specialism, particularly in Robotic &amp; Autonomous Systems, Mechanical Engineering or Materials Science &amp; Engineering</td>
<td>Essential</td>
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<th>Skills, abilities and competencies</th>
<th>Essential / Desirable</th>
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<tr>
<td>Ability to define, lead, manage and attract funds for internationally excellent research, operating across disciplinary boundaries</td>
<td>Essential</td>
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<td>Proven leadership and managerial skills</td>
<td>Essential</td>
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<td>Ability to manage and interact with staff and students at all levels and to contribute to broadening the strategic development of the School</td>
<td>Essential</td>
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<td>Ability to consistently publish academic work that is recognised as internationally leading</td>
<td>Essential</td>
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<td>Ability to work with external and non-academic organisations for research impact and innovation</td>
<td>Essential</td>
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<td>Evidence of international collaboration</td>
<td>Essential</td>
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<td>Evidence of peer review activities</td>
<td>Essential</td>
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<th>Experience</th>
<th>Essential / Desirable</th>
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<td>International leader in a major research field, leadership of research group/theme</td>
<td>Essential</td>
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<td>Substantial publication record in leading peer-reviewed journals</td>
<td>Essential</td>
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<td>Attraction and effective supervision of postgraduate students</td>
<td>Essential</td>
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## PERSON SPECIFICATION

### Experience (continued)

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<tr>
<th>Experience</th>
<th>Essential / Desirable</th>
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<tr>
<td>Significant and sustained success in accessing research grants and other external funding</td>
<td>Essential</td>
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<tr>
<td>Exceptional achievement in curriculum development, course design and teaching, learning and assessment methods at UG and PG levels and in encouraging student access and engagement</td>
<td>Essential</td>
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<tr>
<td>Invited presentations at major international conferences</td>
<td>Essential</td>
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<tr>
<td>Effective and sustained involvement in major administrative tasks or positions of responsibility within a department or research unit</td>
<td>Essential</td>
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<tr>
<td>Success in the commercial exploitation of research</td>
<td>Desirable</td>
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### Personal attributes

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<tr>
<td>Demonstrable capacity for strategic thinking and planning</td>
<td>Essential</td>
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<td>Ability to take a lead in key administration functions within the School</td>
<td>Essential</td>
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<td>Self-motivated, pro-active and innovative</td>
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The School of Physics, Engineering and Technology will formally launch from summer 2022, bringing together the combined strengths of our existing departments of Electronic Engineering and Physics, with new initiatives - especially those that enhance our capability in engineering disciplines.

Engineering at York is moving into an exciting new phase. Significant University investment is enabling an expansion of engineering, both in terms of new laboratory and research facilities and staff. Over the next 5 years, an additional 10 academic staff appointments are planned, with this Chair post being one of the foundation of this expansion.

The Department currently undertakes world-leading research with groups working in multidisciplinary areas including: electronic and computer engineering, specifically, bio-inspired adaptive architectures and systems; applied electromagnetics, signal processing and coding for communications; nano-scale device fabrication and analysis; autonomous and robotic systems; healthcare engineering and biomedical engineering: https://www.york.ac.uk/electronic-engineering/

This post will develop research across the broader discipline of Engineering and we particularly welcome applications in the areas of Robotic & Autonomous Systems, Mechanical Engineering or Materials Science & Engineering (or combinations of these).

Turning to the vision for the School of Physics, Engineering and Technology, its research philosophy values and supports blue skies thinking that underpins the individual research ambitions of our staff, while at the same time providing a framework that fosters innovation in goal-driven research to meet some of the grand challenges facing society. To enable this, the research structure of the School will be constructed from two sets of Themes: Discovery and Translational.

Discovery Themes are the technical topical themes that characterise and underpin our core disciplines of Engineering and Physics. They represent our traditional, disciplinary strengths, with a philosophy of academic freedom and blue skies thinking at their heart. They have a close and direct coupling with our taught undergraduate programmes, and provide a rich, diverse, stimulating environment with strong internal and international collaborations, seeking to enable our research staff and students to realise their individual ambitions.

Translational Themes build on the solid foundations of the Discovery Themes. They create opportunities to drive our fundamental research activities up the lower ranks of the Technology Readiness Level (TRL) scale towards a level of maturity that provides external stakeholders with the confidence to invest, and so accelerate research discoveries and ideas towards societal, environmental and economic benefit.
The chosen thematic areas and the projects within them, are motivated by the pull of society’s grand challenges, and are expected to be highly coordinated, strategic, interdisciplinary projects typically involving strong collaborations across University Departments and Centres, as well as with external stakeholders.

In the 2014 REF 87% of Engineering research outputs were judged world-leading or internationally excellent. Our research groups work with industry and universities across the world while providing a friendly and supportive environment for staff and students.

Engineering has a long-standing reputation for high-quality teaching and learning and highly employable graduates. Our MEng and BEng undergraduate programmes in a number of subject areas are fully accredited by the IET (Institution of Engineering and Technology) at CEng (Chartered Engineer) level: [http://www.york.ac.uk/electronics/undergraduate/](http://www.york.ac.uk/electronics/undergraduate/).

Within Engineering our student body consists of approx. 500 undergraduate students and over 200 postgraduate students. Our taught postgraduate students undertake one of our suite of MSc programmes, covering the latest technologies and skills in important industry sectors. We have a vibrant community of postgraduate research students enrolled on our PhD programme bringing our total student cohort to around 800 students.

Engineering has 45 academic staff (including part-time and job share), research staff and a team of support staff, providing administrative and technical assistance. The Department continues to hold the Bronze Award from Athena SWAN, which was first awarded in 2013. The Athena SWAN Charter recognises and celebrates good practices in higher education and research institutions towards the advancement of gender equality: representation, progression and success for all. We operate a family friendly policy and is committed to gender equality and diversity. We recognise that a flexible approach to working is vitally important in the recruitment and retention of staff who have family commitments. We offer flexible working hours to all staff and will actively support job sharing and career break requests where it is reasonable and practical to do so and where operational needs will not be adversely affected.

We provide support for all categories of staff in their applications for promotion, role reviews, awards and prizes and rewarding excellence nominations. We strive to address gender inequalities and ensure that there is a culture that supports equality and encourages better representation throughout the department. Support for women at all stages of their career is recognised as being extremely important.

Further details of the Department can be found on its website: [https://www.york.ac.uk/electronic-engineering/](https://www.york.ac.uk/electronic-engineering/)
THE UNIVERSITY

We are a world-class institution, focused on creating an environment of excellence in which all our students, staff and researchers can thrive. Our Research Strategy encompasses our vision that York should provide a home for some of the best research in the world. ([https://www.york.ac.uk/research/](https://www.york.ac.uk/research/))

We are a high-performing member of the Russell Group, ranked 16th in the Guardian’s Best University UK Universities 2021 League Table, and 30th in the Complete University Guide 2020. We have been awarded TEF Gold for our research-led teaching which provides "consistently outstanding outcomes for students from all backgrounds".

Our Equality, Diversity and Inclusion Strategy speaks to the core of our values. We hold 16 awards from Athena SWAN, recognising the advancement of gender equality: representation, progression and success for all.

At the heart of the region

The University is deeply embedded in the local community of North Yorkshire. Our values and commitment to the public good have never been more important. We are a hub for sharing knowledge, inspiring collaboration and enriching lives.

In 2021 we were shortlisted for Times Higher Education’s University of the Year Award in recognition to the University’s response to the Covid pandemic [The Year We Came Together - Our Covid-19 response](https://www.york.ac.uk/about/mission-strategies/mission/).

Across the University, we are mobilising our knowledge, our people and our resources to tackle the immediate and long-term challenges. The new University Strategy 2030, ([A University for Public Good](https://www.york.ac.uk/about/mission-strategies/mission-for-york/)) was launched at the end of 2021, outlining our vision and strategy for the next decade.

Further information on the new strategy can be found on the following webpages; [https://www.york.ac.uk/about/mission-strategies/mission-for-york/](https://www.york.ac.uk/about/mission-strategies/mission-for-york/).
THE UNIVERSITY

Centred around the picturesque village of Heslington on the edge of the city of York, our colleges are set in an attractive landscaped campus. York enjoys a safe, friendly atmosphere with facilities including bars, shops, theatres and concert halls all within easy walking distance.

The University has undergone an unprecedented period of expansion and renewal since 2000. We have invested in twenty new buildings on the original campus and have completed the first and second phases of a £750m campus expansion. Our investment in new colleges, teaching and learning spaces, laboratories, research facilities and a new sports village mean there has never been a better time to join us.

During this period of change we’ve worked hard to retain our friendly, informal and collegiate atmosphere, which is important to our core values of inclusivity and interdisciplinarity.

We have a thriving international community and are committed to providing staff moving to York with as much support as possible through our Relocation Package and Welcome Officers.

The University is committed to promoting a diverse and inclusive community - a place where we can all be ourselves and succeed on merit. We offer a range of family friendly, inclusive employment policies, flexible working arrangements, staff engagement forums, campus facilities and services to support staff from different backgrounds.

For further information please visit our employee benefit pages.
THE CITY AND THE REGION

The City of York

Internationally acclaimed for its rich heritage and historic architecture, York's bustling streets are filled with visitors from all over the world. Within its medieval walls you will find the iconic gothic Minster, Clifford's Tower and the Shambles - just a few of the many attractions.

But York isn't just a great place to visit - it's also a great place to live and work. While nourishing a vibrant cosmopolitan atmosphere, York still maintains the friendly sense of community unique to a small city.

Visit [www.visityork.org](http://www.visityork.org) for more information on the city of York

Shopping, culture and entertainment

York boasts specialist and unique boutiques but also all the high street stores on its busy shopping streets. Alongside them you will find cinemas, theatres, an opera house, art galleries, a vast range of restaurants, live music venues and clubs. York is particularly renowned for its multitude of pubs and bars, from the modern to the medieval.

Housing and schools

Whether you choose to live close to the city, in one of the surrounding villages or further afield, you will find a wide range of housing within comfortable distance of York and the University. For families, the area has a range of excellent schools both in the state and independent sector.

Great location

York is one of Britain's best-connected cities. Halfway between London and Edinburgh on the East Coast mainline, on intercity trains you can reach London King's Cross in less than two hours and Edinburgh in two and a half hours. York is also well served by road links, and it is easily accessible from the A1, M1 and the M62.

For those travelling from overseas, Manchester Airport is two hours away and Heathrow Airport just three and a half. Flights from nearby Leeds Bradford Airport provide easy access to mainland Europe. By Eurostar from London St Pancras, Paris is just over six hours away.

Yorkshire

The Lonely Planet guide recently declared Yorkshire the third best region in the world to visit. There is something to cater to every taste, whether it be the rugged landscapes of the Moors or the Dales, the picturesque seaside towns of Scarborough and Robin Hoods Bay, the gothic architecture of Whitby or the vibrancy of cosmopolitan Leeds.
Apply online

- Go to https://jobs.york.ac.uk
- Find this job using reference 10191
- Complete the online application form

You will need to submit your completed application by midnight (local UK time) on 16 January 2022.

What will I need?

We will ask you for details of:

- Your CV
- A letter describing how you meet the requirements of the job
- A statement of your research and teaching intentions

You will also need details of three academic referees (one International) and one Employment referee.

Help and assistance

For an informal discussion regarding this post, please contact the Head of Department, Prof Andy Tyrrell (andy.tyrrell@york.ac.uk), or Simone Quinn (simone.quinn@york.ac.uk), if you would like to learn about working at the University of York.

If you have any questions about your application, contact the HR Services team:

recruitment@york.ac.uk
+44 (0)1904 324835