

THE UNIVERSITY OF MANCHESTER

PARTICULARS OF APPOINTMENT

FACULTY OF SCIENCE & ENGINEERING

SCHOOL OF ENGINEERING

DEPARTMENT OF MECHANICAL, AEROSPACE & CIVIL ENGINEERING

LECTURER IN MECHANICAL ENGINEERING (TEACHING & SCHOLARSHIP) (TWO POSTS)

VACANCY REF: SAE-017640

Salary: Grade 7 £42,149 to £51,799 per annum (according to relevant experience)

Hours: Full time

Duration: 4 years Fixed Term

Location: Oxford Road, Manchester

Enquiries about the vacancy, shortlisting and interviews:

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The University of Manchester

The University of Manchester was created in 2004 by bringing together The Victoria University of Manchester and UMIST, two of Britain's most distinguished universities, to create a powerful new force in British Higher Education. The University of Manchester provides an exciting environment for teaching and learning with a city centre campus alive with student activity day and night. The vision for the University of Manchester is to be one of the finest universities in the world. The University is one of the largest in the UK and has teaching and research in more subjects than any other single-site British University. Students benefit from unrivalled facilities while staff benefit from an environment which is fast emerging as a centre for research excellence.

Faculty of Science and Engineering

The Faculty of Science and Engineering is large and comprehensive with nine Departments: Chemical Engineering & Analytical Sciences; Chemistry; Computer Science; Earth, Atmospheric & Environment Sciences; Electrical & Electronic Engineering; Materials; Mathematics;



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Mechanical, Aerospace & Civil Engineering; and Physics & Astronomy. Together with research institutes including: Manchester Institute for Biotechnology, Dalton Nuclear Institute and Photon Science Institute, Thomas Ashton Institute and the University of Manchester Aerospace Research Institute (UMARI), the Faculty represents a diverse portfolio of research and teaching of the highest quality. Many of the major advances of the 20th century began in this Faculty, including the work by Rutherford leading to the splitting of the atom and the development of the world's first modern computer. Today, research activities remain at the cutting-edge and the Faculty now generates more than a third of the total research income for the University.

The Department of MACE

The Department of MACE is the largest engineering Department within the Faculty of Science and Engineering at the University of Manchester. Manchester was the birthplace of the engineering discipline, and MACE has historical routes in the Institute of Mechanics in founded in 1824. Today the Department hosts more than 1300 undergraduate and 450 postgraduate students, delivers undergraduate programmes across Mechanical, Aerospace and Civil Engineering, and MSc programmes in both technical engineering subjects and management. With 120 academic staff, 90 technical and support staff, and 300 postgraduate research students and post-docs, the Department is **at the forefront of engineering education** in the UK.

The Department hosts world-leading academic researchers in areas including structures in extreme environments, innovative manufacturing, engineering resilient systems, modelling and simulation, aerospace engineering and nuclear engineering. Research activities are connected into a range of research institutes and centres including the Dalton Institute, the Modelling & Simulation Centre and MACE has a leading node of the interdisciplinary Tyndall Centre for Climate Change Research. Research active academics are strongly encouraged to engage in multi-disciplinary research through collaborating with colleagues across Manchester's Departments, Faculties and Institutes, and coordinate activities supporting the University's specialist beacon areas, for example Addressing Global Inequalities, Advanced Materials and Energy.

Overall Purpose of the Job

As a Lecturer in Mechanical Engineering you will be part of an enthusiastic and dedicated team of academics responsible for enhancing key modules and themes on our undergraduate degree programmes. You will be passionate about the delivery of engineering education and creative in the manner in which you seek to deliver exciting and engaging learning content. We are particularly interested to hear from candidates with experience relevant to the delivery of the following topics; design, advanced manufacturing, industrial reliability and mechanical vibrations.

Person specification

Essential

- PhD degree (or equivalent) in an area of mechanical engineering, including aerospace;
- A passion for teaching and innovation in engineering and experience in teaching fundamental aspects of mechanical or aerospace engineering at undergraduate and / or postgraduate level;



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- Knowledge of the scope of professionally accredited engineering degrees in the areas of mechanical or aerospace engineering;
- Ability to design, develop and deliver modules or cross-module teaching materials in the areas of engineering; particularly focused on design, advanced manufacturing, industrial reliability and mechanical vibrations;
- Evidence of being an excellent and committed teacher: demonstrating adaptability and imagination in design and delivery of high-quality teaching via range of media;
- The ability to design and develop high-quality assessment and examination activities. Experience in the provision of high-quality formative feedback on student performance.
- The ability to provide excellent supervision of individual projects or dissertations inspired by societal and industrial challenges;
- Commitment to sharing knowledge of teaching methods in engineering education, including publications on engineering pedagogy;
- Commitment to working in a collegial and supportive way to maximise the performance of the Department;
- Excellent organisational and communication skills and ability to maintain a safe working environment at all times;
- Experience of providing pastoral support and guidance to students, resolving issues and/or referring to specialist parties, where appropriate

Desirable

- Experience of engineering teaching excellence and industrial experience to emphasis on industrial relevance into teaching
- Fellowship of the Higher Education Academy (FHEA)
- Postgraduate Certificate in Higher Education or Postgraduate Certificate in Education
- Experience of teaching assessed modules at University level, demonstrating the candidate's ability to offer high quality and varied teaching
- Experience of delivering lab-based teaching or demonstrating of practical engineering modules at undergraduate and / or postgraduate level;
- Ability to design and deliver a lecture course appropriate for engineering undergraduate PGT -level instruction
- Experience of obtaining funding from the university and externally for the development of novel teaching and learning initiatives;
- Experience teaching large cohorts of students at different levels
- Experience of teaching small-group tutorials in engineering at undergraduate level
- Experience of supervising undergraduate dissertations and projects
- Experience of pastoral care of undergraduate students
- Ability to devise, develop and test new experiments in engineering, suitable for undergraduate-level instruction
- Experience of, or demonstrable interest in, curriculum development and innovative teaching methods
- A willingness to develop and/or engage with activities to enhance the employability of undergraduate and postgraduate students
- Expertise in providing constructive feedback to enhance learning
- Use of e-learning tools/ paperless methods/ student learning
- An appreciation and understanding of the wider Higher Education landscape