Lecturer (Teaching & Scholarship) – Assurance of Robotics and Autonomous Systems

Department:	Computer Science
Hours of work:	Full-Time / 37 hours a week
Contract type:	Fixed-Term / to 31st December 2022
Salary:	£40,322 - £49,553 a year / Grade 7

Introduction

We are seeking highly-motivated staff to work on research-led teaching as part of the Assuring Autonomy International Programme (AAIP) (https://www.york.ac.uk/assuring-autonomy/). The AAIP is an exciting £12 million initiative funded by Lloyd's Register Foundation and the University of York to spearhead research in the safety of robotics and autonomous systems (RAS). The roles are concerned with research into safety assurance for RAS across a range of applications and domains. This encompasses many topical and challenging areas of research including autonomous driving, smart manufacturing, e.g. cobots, agricultural robotics, and AI-enabled clinical diagnosis. No prior knowledge of such application areas is required, and you will have the opportunity to learn from experts working in these fields.

An important part of the AAIP activities is our support for education and training for external companies, regulators and other academic institutions (https://www.york.ac.uk/assuring-autonomy/training/). In this role you will have the opportunity to engage with ongoing research and demonstrator projects (https://www.york.ac.uk/assuring-autonomy/projects/) and other research partners to develop and deliver research-informed teaching material to help disseminate the work of the programme.

You will be part of a vibrant and growing team, and will collaborate with the other research, teaching and professional services staff in the programme, our experienced programme fellows, and our partner organisations and be instrumental in applying and validating the research outputs. In doing so you will play a key role in ensuring that the work of the programme has a substantial real-world impact. You will also contribute to the development of the Institute for Safe Autonomy, moving to a new £15M purpose-built facility housing modern experimental laboratories towards the end of 2021

Main purpose of the role

- To lecture, lead seminars, tutorials and other forms of graduate and postgraduate teaching
- To develop and apply innovative and appropriate teaching techniques and material which create interest, understanding and enthusiasm amongst students
- To carry out on-going curriculum review, including teaching content and materials and contribute to the development of teaching and learning strategies
- To undertake effectively a range of administrative and managerial responsibilities
- To collaborate with research staff to ensure teaching is informed by the latest research results

Key responsibilities

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

Teaching and Promotion of Learning

- To support the teaching objectives of the department by delivering teaching through allocated lectures, tutorials and other forms of postgraduate teaching
- To set and mark coursework and examinations, providing constructive feedback to students
- To ensure the quality of the design of existing teaching content, continually monitoring, evaluating and revising them to ensure excellence and coherence, identifying areas where current provision is in need of revision or improvement
- To develop teaching and learning activities in the department and deliver teaching across a range of modules and to all levels, through lectures, tutorials, practicals and seminars

- To oversee, develop and promote innovative teaching and learning approaches and material, which create interest, understanding and enthusiasm amongst students
- To ensure that teaching design and delivery comply with the quality standards and regulations of the University and department

Administrative and support responsibilities

- To act as internal examiner for postgraduate students
- To supervise directly students, students' projects, field trips and academic activities. To provide expert advice on learning best practice and helping with learning problems. To identify the learning needs of students and define learning objectives
- To contribute to planning and teaching design across a range of modules and to the administration and management of teaching programmes
- Engagement with internal and external activities that contribute to the smooth and collegial operation of the University

Involvement in scholarship and development

- To investigate innovative teaching, learning and assessment methods and techniques in the sector generally, bringing new insights to the department
- To disseminate excellent teaching practices e.g. through discipline or inter-disciplinary groups both within and beyond the University

Person specification

	Essential / Desirable
Qualifications	
Undergraduate degree in STEM (science, technology, engineering & mathematics)	Essential
Postgraduate degree in STEM (science, technology, engineering & mathematics) or equivalent experience	Essential
Appropriate academic professional and teaching qualification or a willingness to complete the Postgraduate Certificate in Academic Practice	Essential
PhD in STEM (science, technology, engineering & mathematics)	Desirable
Knowledge	
Sufficient knowledge in RAS or complex computer-controlled systems to design and develop RAS (assurance) teaching programmes and the provision of learning support across different levels of academic activity	Essential
Knowledge of a range of teaching techniques and methodologies	Essential
Advanced and specialist IT knowledge	Essential
Knowledge of approaches for safety assurance	Desirable
Knowledge of safety assurance for RAS	Desirable
Knowledge of machine learning	Desirable
Knowledge of approaches for software safety	Desirable
Skills, abilities and competencies	
Highly developed communication skills to engage effectively with a wide ranging audience, both orally and in writing, using a range of media	Essential
Ability to innovate in teaching and learning, e.g. through the development of teaching materials	Essential
Ability to teach at any level within area of expertise, and across a range of subjects at a more introductory level, and demonstrate enthusiasm and commitment in the process of teaching	Essential
Ability to present specialist material in a logical, coherent and interesting manner, both to students and to fellow specialists	Essential
Ability to obtain new knowledge by theoretical and/or practical methods	Essential

Ability to disseminate scholarly work, for example presenting papers at conferences and workshops, development of appropriate websites and publishing articles or papers in academic journals	Essential
Experience	
Experience in teaching and learning in HE at undergraduate or postgraduate level or in an evidenced similar context	Essential
Experience of using different delivery techniques to enthuse and engage students	Essential
Evidence of successful planning and teaching design across a range of modules	Essential
Evidence of lecturing, leading seminars, tutorials and other forms of undergraduate and postgraduate teaching	Essential
Experience in working on development or assurance of RAS or related technologies	Desirable
Personal attributes	
Attention to detail and commitment to high quality	Essential
Displays creativity, initiative and judgement in applying appropriate approaches to teaching, learning support and scholarly activities	Essential
Collaborative ethos	Essential
Positive attitude to colleagues and students	Essential
Willingness to work proactively with colleagues in other work areas/institutions	Essential
Ability to plan and prioritise own work in order to meet deadlines	Essential
Commitment to personal development and updating of knowledge and skills	Essential
Willingness to travel within UK and abroad	Essential