Job Description

Position: Senior Lecturer - Mechatronics / Defence Engineering

School: School of Engineering and Built Environment

Reference: ENG-261/A

Grade: 8

Status: Fixed Term – 2 years

Hours: Full Time

Reporting to: Head of School

Responsible for: Delivery of teaching, assessment, curriculum development and associated research and enterprise initiatives.

Main function of the Post:

- To lead and teach on undergraduate and taught postgraduate engineering related programmes, leading as appropriate in dedicated areas.
- To design, lead, manage and contribute where appropriate, to commercial income generation activity, and will undertake research projects, knowledge exchange and scholarly activity to contribute to the development of new areas in their relevant subject field. Including identifying and preparing proposals and applications to external bodies, as required, to secure research funding and additional income/opportunities for the University through grants, industry collaborations, and government initiatives.
- To be responsible for leadership and delivery of teaching, assessment, curriculum development and associated research and enterprise initiatives.

Principle Duties and Key Responsibilities:

- Lead the development and delivery of high-quality, cutting-edge teaching programmes in electro-mechanical and manufacturing engineering, with a particular emphasis on defence-related applications.
- Provide academic leadership, management, direction and contribute to the strategic direction of the academic teaching, research, projects, learning resources and industry collaborations, as assigned by the Head of School.
- Manage, supervise and mentor undergraduate, postgraduate, and PhD students, fostering an environment of academic excellence, innovation and delivering high standards in student assessments, feedback, and academic support
- Be responsible for the design, delivery and on-going evaluation of relevant modules/programmes, ensuring School objectives and learning outcomes are met, and reflects relevant content and current practice,
- Develop and deliver workshops, seminars, and research forums, encouraging collaboration between academia and industry professionals.
- Ensuring currency of documentation and practise in dedicated laboratory areas.

- Develop and monitor innovative and creative appropriate assessments which measure student performance and understanding, to ensure learning outcomes have been met.
- To provide effective management for academic leadership on the Masters in engineering programmes and the process of enrolment, induction, student choice, module scheduling and provision of any relevant student information.
- Provide leadership in the integration of electro-mechanical engineering, AI, smart manufacturing, and digital technologies within engineering and manufacturing curriculum.
- Challenge ideas, foster debate and encourage students to develop skills in critical discourse and rational thinking.
- Use a variety of learning and teaching methods/materials (e.g. web-based and blended learning) to enhance the student experience.
- Take responsibility for the pastoral care of students within a specified area, referring problems on where they are complex or serious.
- Lead others and plan assessment deadlines and specific teaching arrangements to ensure student needs and expectations are met and that time and resources are used effectively.
- Manage the demands of teaching, administration, research and scholarly activity to ensure competing deadlines are met.
- Contribute to the review and continuous improvement of academic programs, ensuring alignment with industry best practices and professional body accreditation requirements.
- Design, review and adapt academic/programme content and guidance materials by interpreting student feedback pre-empting needs to enable input to the overall development of the programme and enhance and support student progression and experience.
- Engage with industry stakeholders to build and sustain partnerships, ensuring the teaching and research meet the needs of the rapidly evolving defence sector.
- Write and publish results of high quality and innovative research within national and international high-impact research literature and peer-reviewed journals developing appropriate research methodologies to further scholarly activities.
- Supervise the research or project work of taught undergraduate, postgraduate and/or research students, as required, to support and mentor the development of student research skills.
- Lead research initiatives or other agreed scholarly activity in order to contribute to the development of School Practise in areas of electro-mechanical engineering, Industry 4.0, Industry 5.0, AI in manufacturing, and advanced manufacturing techniques used in the defence industry.
- Develop research objectives for own/and/or collaborative research in line with funding criteria. Act as a referee and contribute to peer assessment for appropriate journals as required.
- Identify gaps in course content and programme structure with colleagues and devise creative solutions which meet the requirements of overarching teaching frameworks.
- Proactively and effectively engage with quality assurance procedures, contributing to papers as appropriate, to ensure School/University standards are upheld.
- Provide support, guidance and training to junior members of staff on the skills, processes, and activities relevant to the School. Provide feedback to colleagues via peer mentoring schemes to support development of self and others and ensure continuous improvement of the School’s performance.

- Contribute to and assist in appropriate pre-entry, recruitment, selection and admissions activities (including Open Days/Industry and Partner Visits) to promote the School and identify student needs and expectations. Coordinate student events ensuring appropriate use of time and resources.
- Interact on a professional level with relevant internal and external professional bodies to ensure currency of knowledge, relevancy and accreditations.
- Ensure and maintain integrity and confidentiality of data and associated data protection requirements in line with statutory and corporate requirements
- Ensure a safe working environment and abide by University health and safety policies and practices and to observe the University's Equal Opportunities policy and Dignity at Work policy at all times.
- Awareness of environmental and sustainability issues and a commitment to the University's associated strategy with respect to the performance / delivery of key responsibilities of the role.

Note:
This is a description of the role requirements as it is presently constituted. It is the University's practice to periodically review job descriptions to ensure that they accurately reflect the role requirements to be performed and if necessary, update to incorporate changes were appropriate. The review process will be conducted by the relevant manager in consultation with the role-holder.

Please note that this appointment maybe subject to Disclosure and Barring Clearance.

Person Specification

Position:	Senior Lecturer - Mechatronics / Defence Engineering	**Reference:** ENG-261/A	
School:	School of Engineering and Built Environment	**Priority**	**Method of**
Criteria		**(1/2)**	**Assessment**
1	**Qualifications**		
1 a)	Honours degree in relevant subject area	Priority 1	Application Form / Documentation
1 b)	A postgraduate Masters qualification in relevant subject area	Priority 2	Application Form / Documentation
1 c)	Registration with a relevant regulatory professional body (IEng/ CEng)	Priority 1	Application Form / Documentation
1 d)	A relevant teaching qualification and/or fellowship status of the Higher Education Academy (HEA), or a willingness to obtain fellowship membership of the HEA within a specified time frame	Priority 1	Application Form / Documentation
1 e)	PhD/Professional Doctorate or within final year of submission, or equivalent level qualification or exceptional industrial experience and achievements in the professional field of electro-mechanical, manufacturing or a relevant engineering.	Priority 1	Application Form / Documentation
2	**Skills / Knowledge**		
2 a)	Able to contribute to the development and delivery of undergraduate/postgraduate programmes in the School and devise creative solutions that impact positively on teaching and learning	Priority 1	Application Form / Interview
2 b)	Proven ability and commitment to undertake appropriate subject specific research and/or enterprise activity and ensure it informs teaching	Priority 1	Application Form / Interview
2 c)	Able to successfully and effectively lead and manage academic/research programmes and teams	Priority 1	Application Form / Interview
2 d)	Credible academic development, teaching and assessment skills within an electro-mechanical and manufacturing engineering context	Priority 1	Application Form / Interview / Assessment
2 e)	Proven ability to work effectively independently and with others as a team member	Priority 1	Application Form / Interview
2 f)	Strong knowledge and experience in the subject matter specialist in areas of electro-mechanical and manufacturing engineering areas including, finite element methods, smart manufacturing, digital twins, radar and communication technology (such as acoustics, optical, sonar), antenna & wave propagation, power & propulsion systems, hydraulic systems, automation, materials/ structure, metrology, NDT, sustainability, AI, defence communication technologies, predictive analytics, quality management and other engineering topic areas	Priority 1	Application Form / Interview
2 g)	Expertise in the use of simulation tools, hands-on practical delivery on electro-mechanical, AI programming, robotics, and additive manufacturing technologies	Priority 1	Application Form / Interview

2 h)	Strong leadership and organisational skills, with the ability to manage multiple projects and contribute to the strategic direction of the School	Priority 1	Application Form / Interview
2 i)	Ability and experience to operate systems and processes to enhance quality and teaching and learning excellence	Priority 1	Application Form / Interview
2 j)	Ability and commitment to undertake appropriate subject specific research and/or enterprise activity and/or high-level professional practice within the field	Priority 1	Application Form / Interview
2 k)	Knowledge and experience in supervising student work and providing appropriate support/feedback	Priority 1	Application Form / Interview
2 l)	Knowledge and understanding of academic organisation and its processes as well as academic/research management and delivery.	Priority 1	Application Form / Interview
2 m)	Possess sufficient breadth and/or depth of specialist knowledge to work within established programmes and to contribute to research in the area of mechatronics, electro-mechanical and manufacturing engineering.	Priority 1	Application Form / Interview
2 n)	Excellent written and oral communication skills and the ability to influence and persuade people at all levels and to exchange complex concepts in a manner appropriate to the audience.	Priority 1	Application Form / Interview / Assessment
3	**Experience**		
3 a)	Proven teaching, research and programme leadership experience including the design, delivery, assessment and validation of modules/courses and leading programmes to achieve accreditation.	Priority 1	Application Form / Interview
3 b)	Experience of working in the field of mechatronics, electro-mechanical, advanced manufacturing or related engineering discipline either directly with or within the defence industry.	Priority 1	Application Form / Interview
3 c)	Strong network within the defence, mechatronics, manufacturing, or academic research communities.	Priority 1	Application Form / Interview
3 d)	Relevant experience in the supervision of the work of undergraduate and/or postgraduate students and providing appropriate pastoral support	Priority 1	Application Form / Interview
3 e)	Experience of contributing to and implementing quality assurance procedures and improvements	Priority 1	Application Form / Interview
3 f)	Experience in using and developing new technologies and professional practice initiatives relevant to the subject areas	Priority 1	Application Form / Interview
3 g)	Proven experience of leading research projects, preparing proposals/applications to external bodies to secure funding and developing successful partnership arrangements with industrial/educational providers	Priority 1	Application Form / Interview

3 h) Extensive research experience in electro-mechanical, advanced manufacturing technologies, AI applications in engineering, defence communication and manufacturing systems, includes publishing results of research in high-impact journals.	Priority 1	Application Form / Interview

3 i)	Experience in seeking and managing research funding, including from defence, industrial, or government sources.	Priority 1	Application Form / Interview
3 i)	Minimum of 5 years of experience in teaching at a higher education institution, with proven success in developing and delivering engineering curriculum and successful learning and teaching improvements.	Priority 1	Application Form / Interview
3 k)	Experience in mentoring and supporting early-career academics and researchers.	Priority 1	Application Form / Interview
3 l)	Proven track record of successful interdisciplinary collaborations with industry, particularly in defence electro-mechanical engineering, manufacturing or related sectors.	Priority 1	Application Form / Interview
3 m)	Experience in recruiting international students and collaborating with European/overseas institutions.	Priority 1	Application Form / Interview
4	**Personal Qualities**		
4 a)	Awareness of the requirements associated with operating within a customer service environment	Priority 1	Interview
4 b)	Commitment to continuous improvement and creative ways of working	Priority 1	Application Form / Interview
4 c)	Excellent communication and interpersonal skills, with the ability to engage effectively with students, colleagues, and external partners.	Priority 1	Interview
4 d)	Able to work individually and under own initiative and to successfully lead and manage discrete projects and motivate others to reach agreed objectives/deadlines.	Priority 1	Interview
4 e)	Able to critically reflect on all aspects of own contributions to the role	Priority 1	Interview
4 f)	Able to network effectively with local/national employers and organisations	Priority 1	Interview
4 g)	Able to demonstrate sensitivity in dealing with colleagues / partners and stakeholders from different cultural backgrounds.	Priority 1	Interview
4 h)	Commitment to continuous improvement and creative ways of working.	Priority 1	Interview
5	**Other**		
5 a)	Willing to undertake staff development, which may take place outside the University	Priority 1	Interview
5 b)	Awareness of the principles of the Data Protection Act, Health and Safety, UKVI, Prevent, Freedom of Information Act and Bribery Act	Priority 1	Interview
5 c)	Commitment to the University's policy on equal opportunities and diversity	Priority 1	Interview
5 d)	Available to work flexibly and remotely and travel as appropriate in order to meet the needs of the role and service.	Priority 1	Interview
5 e)	Able to travel nationally and internationally in order to meet the requirements of the service.	Priority 1	Interview

5 f)	Hold a current driving license and be prepared to drive University vehicles as required to travel between sites/student events including field trips	Priority 2	Interview/ Documentation

Note:

1. **Priority 1** indicates **essential** criterion – an applicant would be unsuccessful if unable to satisfy all Priority 1 criterion.
2. **Priority 2** indicates **desirable** criterion - applicants failing to satisfy a number of these are unlikely to be successful.
3. It is the responsibility of the employee to ensure any professional accreditation/membership remains current.
4. Employees are expected to have access to suitable IT equipment and broadband internet access at home to work remotely if required.