



Applications are invited from suitably qualified candidates for the following position

Assistant Professor in Sustainability (Computational Fluid Dynamics and Energy Systems)
School of Mechanical and Manufacturing Engineering
Faculty of Engineering & Computing
Fixed Term Three Year Contract

Introduction

Dublin City University (www.dcu.ie) is a young, dynamic and ambitious university with a distinctive mission to transform lives and societies through education, research and innovation. We are a research-intensive, globally-engaged institution, distinguished by both the quality and impact of our graduates, and focus on the translation of knowledge into societal and economic benefit. Excellence in education and research activities has led to DCU's consistent presence in the rankings of the world's top young universities.

Over its relatively short history has developed a strong reputation nationally and internationally for pioneering innovations in higher education. The university is embarking on a period of significant investment in learning innovation across all of its Faculties. This initiative will help us transform the learning experience of undergraduate students at DCU, reconceptualizing learning opportunities, creating authentic connections between the classroom and enterprise, and embedding digital literacies, disciplinary competencies and transversal skills required to truly future-proof our graduates for the rapidly changing workplace. DCU is joined in this project by a strong consortium of enterprise partners, representing key employment sectors in the Irish economy and with a strong presence in DCU's primary catchment area. This programme of innovation is funded under the Irish Government's Human Capital Initiative (HCI) supported by the National Training Fund. It will deliver on the ambitions we have to reimagine undergraduate curricula and to embed innovative pedagogies, enhanced use of technology and deep industry engagement.

School of Mechanical & Manufacturing Engineering

The School of Mechanical & Manufacturing Engineering has been at the forefront of Teaching, Learning, Research and Innovation in engineering since its establishment in 1987. Current programmes include Mechanical and Manufacturing Engineering, Biomedical Engineering and Mechatronics. The School is a research-intensive school that is home to key researchers affiliate to the research centres listed above and also to ESIPP, MEDeng and the Water Institute, and has particular strengths in Biomedical Engineering, Advanced Manufacturing and Sustainable Systems and Energy. At postgraduate levels the school offers taught Master's programmes with Majors in Biomedical Engineering, Simulation Driven Design and Sustainable Systems and Energy, each also with a pathway integrated with bachelor's degrees.

Relationships

The position will report to the Head of School and work closely with other colleagues, the Teaching Convenor/Associate Dean of Teaching and Learning and industry partners. Building positive relationships with professional support staff and technical and pedagogy specialists and engagement with key stakeholders within and outside of DCU is an important part of this role.

The Role

The appointee will be expected to assist the School in implementing an innovative curriculum project, specifically

- developing and delivering a new bachelors programme in Sustainable Systems and Energy, ensuring an industry engaged, research-led approach, integration of challenge based learning, digital tools and hybrid delivery.
- broader implementation of teaching approaches into other target programmes in the school, and
- engaging with university-wide elements of the initiative including cross faculty cooperation, project evaluation and reporting.

The role includes teaching, supervision of laboratory sessions, student mentoring and supervision of taught projects and research.

The role will encompass activities across the three domains, as follows:

Teaching and Learning

Prepare, deliver and assess a range of core subjects in a manner consistent with DCU's high academic standards and in a hybrid environment which involves campus and elements of remote delivery. Teaching extends to supporting innovation in curricula development. Typical activities include

- Contributing to the design and development of new programmes.
- Developing and delivering new or reconceptualised modules and resources.
- Designing and assessing examinations and other types of coursework.
- Using a wide range of teaching and assessment methodologies which foster a deep approach to learning and equip students with the skills and attributes needed to be lifelong learners including challenge based learning and concentrated and immersive learning experiences.
- Co-designing with other academics and industry partners a suite of tools and initiatives that support the transversal skills pathway and embedding transversal skills development, diagnostics and assessments into new and existing programmes
- Supervision of laboratory sessions, and student mentoring.
- Proactive engagement with the renewal of existing courses and programmes.
- Engagement with professional development for teaching particularly in that related to the approaches embedded in the programme.

Research and Scholarship

He/she will be expected to sustain and conduct research, engage in scholarship of quality and substance, generate research income, supervise postgraduate students and publish to the highest international standard both individually and, where appropriate, in collaboration with colleagues in DCU and elsewhere. The appointee will be expected to have clearly articulated research interests and research profile development plans that promote the school's current research priorities, and which will underpin senior modules and projects related to the new degree programme. Of particular

interest is high level research in the area of sustainable systems based on thermofluid dynamic principles, including computational fluid dynamics and turbomachinery.

Contribution to the School, Faculty, University and Profession

Examples include:

- Engagement with planning, quality review and improvement processes, and external programme accreditations.
- Involvement with appropriate professional bodies and associated initiatives.
- Development and delivery of the international activities of the School including international travel to do so.
- Adoption of some administrative functions related to the activities of the School, the Faculty, and the wider University. Such duties will be defined by the Head of School and may include some of the following: degree programme coordination; participation in committees; visits to students on industrial placement within the DCU INTRA programme; student recruitment.

Applicant Requirements

- Applicants must hold an honours degree in a Mechanical Engineering, and should be qualified to a post-graduate level with a PhD specialism in Mechanical Engineering, or a related discipline.
- The successful candidates should ideally have a minimum of three years' relevant post-doctoral experience.
- Applicants must have demonstrated teaching experience at undergraduate and/or postgraduate level, ideally including experience in innovative pedagogies and/or assessments, international and/or online or technology-assisted teaching.
- Applications are specifically invited from those with strong research credentials and publication record, particularly in the field of Computational Fluid Dynamics and Energy Systems
- The successful applicants will also have demonstrated potential to establish an independent research programme and attract research funding from competitive research funding schemes and/or industry.
- Candidates should demonstrate excellent interpersonal and communication skills consistent with the highest quality of teaching and learning, together with evidence of successful teamwork and a collegial approach

Further Information

More information on the School of Mechanical and Manufacturing Engineering and its programmes can be found at: <https://www.dcu.ie/mechanicalengineering>

Mandatory Training

The post holder will be required to undertake the following mandatory training: Orientation, GDPR and Compliance. Other training may need to be undertaken when required.