MTU
Ollscoil Teicneolaíochta na Mumhan
Munster Technological University

Professor of Cyber Physical Systems Engineering



University: Munster Technological University
Faculty: Faculty of Engineering
Reports to: Dean of the Faculty of Engineering
Location: Across MTU Campuses

The Opportunity

Munster Technological University is establishing its first professorial appointments to strengthen research leadership, develop talent and extend the contribution of its research to industry and society. The Professor of Cyber Physical Systems Engineering will help shape this next stage of the University's development, building on established strengths and bringing colleagues together around an ambitious research agenda.

Cyber Physical Systems Engineering connects physical devices, infrastructure and processes with sensing, communications, control, automation and digital intelligence. Its applications reach across manufacturing, energy, healthcare, maritime activity, mobility and other sectors where the dependable integration of physical and digital systems creates opportunities for innovation.

MTU offers a substantial platform for this work. Nimbus and IMaR provide established capability in Cyber Physical Systems and Applied Intelligent Systems, supported by Industry Partnerships, Technology Gateways and Doctoral Research. Complementary expertise across the University includes Photonics, Computing, Artificial Intelligence, Manufacturing, Energy and Maritime Technologies.

The appointment offers the opportunity to connect these strengths, develop researchers and research teams, and build programmes that combine academic excellence with practical application. The Professor will work across faculties and campuses and develop national and international partnerships that expand MTU's research capability and influence.





Purpose and Scope of the Role

The Professor will provide academic leadership in Cyber Physical Systems Engineering, developing an internationally recognised research programme and strengthening the University's capacity to secure funding, develop research talent and deliver impact. The role may expand to take on a broader remit, including Research Centre activity leadership or supervision.

Research capacity building is central to the appointment. The Professor will combine their own research leadership with the development of colleagues, doctoral researchers, and collaborative teams, helping to establish a sustainable foundation for further growth.

The disciplinary focus is the engineering of intelligent, connected physical and digital systems, encompassing their design, modelling, integration, validation, deployment, and dependable operation. Relevant expertise may include embedded systems, sensing, communications, automation and control, robotics, autonomous systems, industrial artificial intelligence, digital twins, and smart infrastructure.

The Professor will collaborate with MTU's existing Chair of Cybersecurity and relevant research groups where security, trust and resilience intersect with engineered systems. The appointment's primary contribution is to Cyber Physical Systems Engineering, with cybersecurity providing complementary expertise.

Principal Responsibilities

Research and Innovation

- Develop and lead a coherent research agenda in Cyber Physical Systems Engineering that builds on MTU's strengths and addresses significant scientific, technological and applied challenges.
- Strengthen research capacity by developing collaborative teams, mentoring colleagues, and supporting emerging researchers to establish independent research profiles and funding portfolios.
- Lead competitive funding proposals and secure sustainable national, international and industry-supported research income.
- Conduct, lead, and disseminate high-quality research through outputs appropriate to the discipline, strengthening MTU's international standing.
- Supervise doctoral researchers to completion and support the development of postgraduate and postdoctoral research talent.
- Connect expertise across faculties, campuses and research groups to develop interdisciplinary programmes and productive use of research infrastructure.
- Build sustained partnerships with universities, research organisations, industry and public bodies, creating opportunities for collaborative research, technology development and application.
- Champion research integrity, responsible innovation and an inclusive research culture.

Teaching and Learning

- Provide academic leadership in research-informed teaching and contribute to teaching, learning and assessment at undergraduate and postgraduate levels.
- Contribute to curriculum and programme development in Cyber Physical Systems Engineering and related areas, reflecting developments in research and professional practice.
- Work with colleagues and external partners to identify emerging skills needs and develop relevant educational responses.
- Support interdisciplinary learning and opportunities for students to engage with research and real-world engineering challenges.
- Contribute to academic quality assurance and the development of effective, inclusive, and student-centred teaching practices.

Contribution to Society

- Develop partnerships that translate research into economic, societal and environmental benefits, with particular attention to regional needs and opportunities.
- Work with industry and MTU's innovation and enterprise functions to support technology adoption, knowledge transfer and commercialisation where appropriate.
- Apply research expertise to challenges such as productivity, sustainable manufacturing, energy transition, healthcare and infrastructure resilience.
- Contribute evidence and expertise to professional practice, policy, standards, and public discussion relevant to the field.
- Promote responsible and inclusive approaches to the development and deployment of emerging technologies.

Contribution to the University

- Contribute to the development and implementation of faculty and university research priorities, strategies and initiatives.
- Provide collegial academic leadership that strengthens collaboration across organisational boundaries and develops the capabilities of others.
- Work with the Chair of Cybersecurity and other academic leaders to develop complementary research activities and shared opportunities.
- Contribute to university committees, academic governance and strategic initiatives appropriate to the role.
- Represent MTU externally and develop relationships that enhance its reputation, research opportunities and contribution to regional and international development.

Person Specification

The successful candidate will be an internationally recognised research leader with the capacity to build research capability through others. They will bring a clear intellectual direction, a sustained record of achievement, and the ability to connect engineering research with practical challenges.

Candidates may come from electrical, electronic, mechatronic, systems, control, robotics, manufacturing, energy, or related engineering disciplines. Candidates from computing or other complementary disciplines must demonstrate a substantial and sustained contribution to the engineering of real-world physical systems.

Essential Criteria

Candidates must demonstrate:

1. *Relevant Qualification* - A doctorate.
2. *Research excellence and standing* - A sustained record of high-quality research and internationally recognised leadership in Cyber Physical Systems Engineering or a closely related field, demonstrating a substantial contribution to the design, modelling, integration or dependable operation of engineered physical and digital systems.
3. *Research leadership and capacity building* - Experience of leading research activity and developing the capability of others through team development, mentoring or collaborative programme leadership.
4. *Competitive research funding* - A successful record of securing external research funding as principal investigator, coordinator or equivalent research lead, and contributing to the effective delivery of funded programmes.
5. *Doctoral supervision and post-doctoral supervision* - Substantial supervision of successful doctoral researchers to completion. Supervision of postdoctoral research staff and other research supporting staff.





6. *Teaching and Educational Contribution* - Demonstrated ability to contribute effectively to research-informed teaching and learning. Relevant evidence may include undergraduate or postgraduate teaching, doctoral education, professional education, curriculum development, or other substantive educational activity.

Desireable Criteria

1. *Interdisciplinary collaboration and external engagement* - A record of developing productive research partnerships across disciplines and with industry, public bodies or other external organisations.
2. *Research application and impact* - Evidence that their research has contributed to technological, industrial, economic, societal, or professional outcomes beyond academic publication.
3. *Collegial leadership* - Evidence of working effectively with colleagues, supporting researcher development, and contributing to a positive, inclusive research and academic environment.

Evidence of Suitability

Candidates should address each essential criterion in their application, identifying their own contribution and the outcomes achieved.

Relevant evidence may include influential publications and other research outputs; competitive funding awards; research programmes and teams developed; doctoral completions; technologies validated or adopted; external collaborations; contributions to professional practice, standards or policy; and educational or mentoring achievements.

The establishment or development of a research centre, laboratory, or comparable research environment can provide strong evidence of capacity building. Candidates may also demonstrate this capability through other substantial research leadership achievements. Leadership in international networks, professional bodies or standards development can provide evidence of research standing and influence.

Research quality and impact will be considered in the context of the candidate's discipline and contribution. The examples above are illustrative and are not additional mandatory criteria.

Responsibilities and Working Arrangements

The responsibilities of the appointment include Research and Innovation, Teaching and Learning, Contribution to Society, and Contribution to the University. Their balance will vary over time according to the University's strategic and operational needs and applicable workload allocation arrangements.

The Professor will undertake other appropriate duties relevant to their skills, competencies and professorial role, maintain their professional development, and comply with relevant university policies and the nationally agreed contract of employment.

Employment Terms

Appointment

- The appointment is full-time and permanent, subject to the terms of the contract of employment.

Salary

- The nationally agreed contract specifies the following salary scale, effective from 1 June 2026: €137,172; €141,988; €146,792; €150,889; €155,208; €159,524; €168,795. The applicable approved scale will apply at appointment, including any subsequent authorised revisions. Starting salary is determined by the rules governing starting pay and pay on promotion and is not subject to negotiation. Incremental progression is subject to relevant university policies and fulfilment of agreed duties.

Probation

- Appointment is subject to a probationary period of 12 months. Confirmation, any continuation of probation and termination during probation are governed by the contract and applicable procedures.

Place of work

- Across MTU Campuses. Regular attendance at other university sites may be required, and appointees must undertake duties at locations reasonably required by the University. In-person attendance is required to discharge the duties of the role. Any remote working arrangement requires approval under the University's Blended Working Policy.

Reporting Relationship

All appointees report to the Dean of the Relevant Faculty. Reporting arrangements are subject to the provisions of the nationally agreed contract.

Annual leave

- Annual leave entitlement is 30 days, inclusive of any compulsory leave days reasonably determined by the University. Leave arrangements must be agreed in advance with the relevant line manager and are subject to university needs and applicable provisions.

Hours and workload

- The appointment is full-time and extends across the 12-month university year. Appointees are required to work the hours reasonably necessary for the proper performance of their duties, taking account of applicable working-time legislation. Remuneration reflects the flexibility required of the role, with no additional payment for additional hours worked. The balance of duties varies according to strategic and operational needs and applicable workload allocation arrangements.

Sick leave and other leave

- Sick leave is governed by the applicable public service sick leave scheme. Other leave entitlements apply in accordance with relevant statutory provisions, university policy and applicable public service arrangements.

Pension

- Membership of the relevant superannuation scheme is compulsory. The applicable scheme, retirement age and pension terms depend on public service rules and the appointee's circumstances. Public service pension abatement provisions may apply where relevant.



Employment Terms

Professional development

- Appointees are expected to maintain their professional development and participate in relevant university development and compliance training.

External activities

- External employment, self employment, working partnerships and consultancy require prior written approval, as specified in the contract.

Academic and professional obligations

- Appointees are subject to contractual provisions on academic freedom, research integrity, confidentiality, data protection and intellectual property, together with relevant university policies and applicable legislation.

Notice

- Subject to the probationary provisions and other contractual exceptions, either party must give at least three months' written notice to terminate employment, unless a shorter period is mutually agreed.

Contractual basis

- The nationally agreed contract of employment governs the appointment. Any separately agreed university support arrangements are subject to their specific terms and approvals.

The University regrets that it cannot pay expenses for candidates attending interviews for this post or for taking up the position, if appointed.



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