Technology Ireland ICT Skillnet

MSc in

Sustainable Cloud Computing

BLENDED • PART-TIME • NFQ LEVEL 9

www.ictskillnet.ie

OLLSCOIL TEICNEOLAÍOCHTA BHAILE ÁTHA CLIATH
DUBLIN
TECHNOLOGICAL UNIVERSITY DUBLIN

Unleash your unstoppable potential, with Technology Ireland ICT Skillnet

Technology is ever-changing. No matter what stage you are at in business or your career, there is always more to learn.

At Technology Ireland ICT Skillnet, our vision is to create **progressive futures**, helping organisations to **transform at scale** and individuals to **develop a competitive edge**, through the **power of learning**.

For almost two decades, Ireland's leading technology companies have trusted us to build the critical skills needed to thrive in a rapidly evolving market.

Let us connect you to the infinite possibilities shaping the world of tomorrow.

Supercharged skills

Each of our programmes are designed, developed, and validated by specialists from academia and industry, working together, with a constant focus on:

1. **Creating opportunity and momentum** for experienced professionals and those starting out or transitioning career.
2. Delivering learning solutions in a way that **balances work and study**.
3. Providing practical skills, along with the theoretical, allowing businesses to **navigate new frontiers in the world of tech**.

6,000+
companies supported

14,000+
learners upskilled

30+
professional programmes

Online, blended, and
in-company training supports

Government-subsidised
programme fees, up to 100%

MSc in Sustainable Cloud Computing

Powering Tomorrow's Cloud, Responsibly

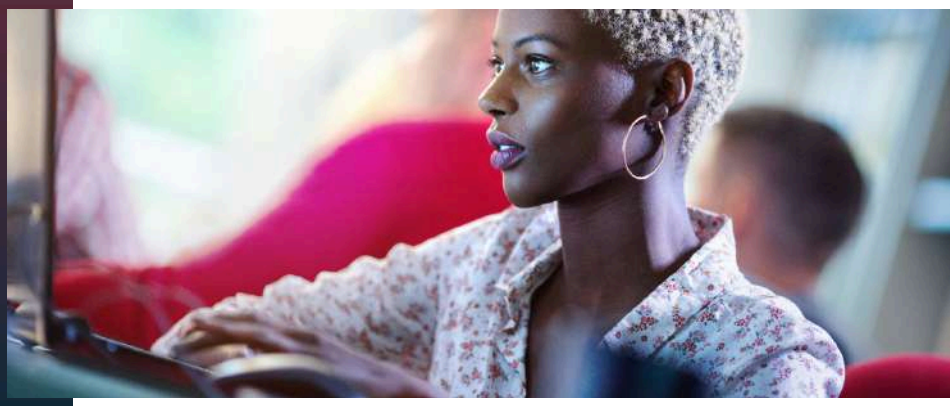
In a world increasingly reliant on digital infrastructure, the environmental cost of progress is no longer an afterthought — **it's a priority.**

Cloud computing has transformed industries, yet its energy demands are growing at an unsustainable rate.

The MSc in Sustainable Cloud Computing fuses advanced cloud architecture, automation, and AI-driven data engineering with sustainability principles, and is designed for forward-thinking professionals ready to lead the next wave of cloud innovation - without compromising our planet.

Developed in close collaboration with leading tech companies and designed by Technological University Dublin's (TU Dublin) School of Enterprise, Computing & Digital Transformation, this innovative 2-year part-time Level 9 Master's programme blends advanced technical learning with deep sustainability insight. You will gain practical, industry-aligned skills in cloud architecture, automation, and AI operation, all through the lens of sustainable digital transformation.

Tailored for experienced professionals and aspiring cloud specialists, the programme equips you to lead the charge in building secure, efficient, and environmentally responsible cloud systems. Whether your goal is to enhance your current role or transition into a strategic position within the cloud ecosystem, this programme offers a unique opportunity to future-proof your skills while making a meaningful impact.



At a glance

Start Date
January 2026

Award
Level 9 NFQ (90 ECTS)

Delivery
Blended: Online and on-campus

Duration
2 years part-time

Fees
Skillnet subsidised: €3,495 per year
Non-subsidised: €5,000 per year

Programme Partner
Technological University Dublin

Programme overview

The employability of Cloud Computing professionals in Ireland has seen significant growth in recent years, mirroring global trends.

TU Dublin, led by the School of Enterprise Computing and Digital Transformation, has developed a practice-led, research-informed Master's programme, designed to meet the needs of experienced ICT professionals working at the intersection of technology, data and sustainability.

Coordinated by Technology Ireland ICT Skillnet, companies such as Fidelity Investments, Liberty IT, Ericsson, IBM, Cisco, HP assisted in the design and development of course content.

Programme structure

The MSc in Sustainable Cloud Computing is a two-year, part-time programme delivered primarily online, using a flexible blended learning model that fits around your professional life.

Key features include:

- Four semesters over two years (90 ECTS total)
- Online-first delivery with occasional in-person workshops
- Hands-on learning aligned with industry needs
- Capstone research project supported by TU Dublin faculty and Technology Ireland ICT Skillnet partners

Who is this course for?

The MSc in Sustainable Cloud Computing is tailored for professionals who are ready to lead with purpose and impact.

Whether you're advancing within your current role or transitioning into a new one, this course will empower you to become a driver of sustainable innovation in your organisation.

- Experienced IT professionals seeking to evolve their cloud capabilities with a focus on sustainability.
- Cloud architects, site reliability engineers, DevOps engineers, and systems administrators aiming to future-proof their skills.
- Professionals working in infrastructure, data, or platform roles who want to deepen their expertise in energy-efficient and ethical cloud practices.
- Graduates in computing, information systems, engineering, or STEM-related disciplines who wish to specialise in sustainable cloud solutions.
- Technical leaders who wish to integrate sustainable development goals into cloud strategy, architecture, and deployment.
- Individuals working in sectors such as finance, healthcare, telecommunications, or public services where cloud innovation and compliance with green policies are priorities.

Semester and module breakdown

The programme consists of four semesters combining technical excellence with sustainability insight, culminating in a major applied research project. Each semester is structured to build your expertise in areas such as cloud architecture, automation, digital strategy, and sustainable data practices.

Working closely with industry has ensured that the modules deliver a blend of advanced cloud computing skills with an in-depth understanding of sustainability, preparing graduates to lead the way in creating greener, more sustainable technologies and solutions.

Semester 1	
Cloud Architecture (10 credits)	• Fundamentals of Public Cloud Architecture • Designing Scalable & Resilient Public Cloud Systems (Networking/Security) • Cost Optimization & Resource Efficiency • Automation and DevOps
Digital Technology Strategy (10 credits)	• Role of Environmental, Social and Governance (ESG) in modern business • Business Cases & Legal Requirements for Sustainability • IT Financial & Value Assessment methods • Managing/Aligning People, Process & Technology

Semester 2	
IT Infrastructure & Automation (10 credits)	• Technical & sustainable considerations associated with managing IT infrastructure • Design & implement the physical/virtual architecture of the Cloud (Public/Private) • Performance, H/W Efficiency & Resource Telemetry considerations in Infrastructure
Human and Organisational Issues (10 credits)	• Manage human interactions with a range of organisation stakeholders/ team collaboration • Leadership – make decisions, negotiate solutions, develop culture, communicate change • Creative problem solving and innovation practices

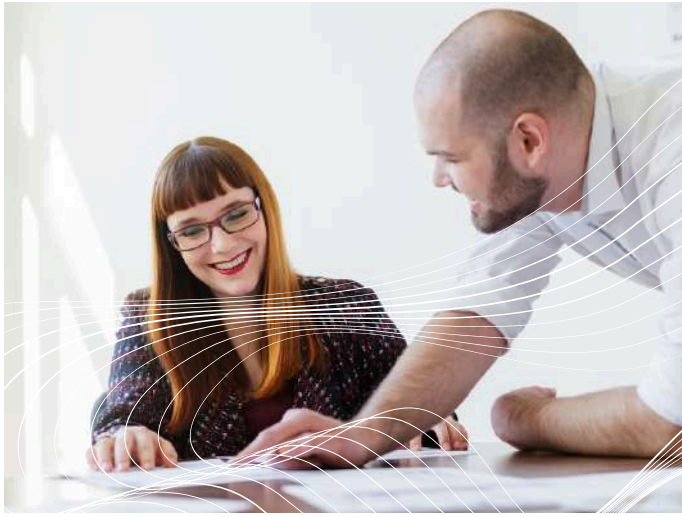
Semester 3	
Cloud Native (10 credits)	• Build, Deploy & Manage modern Apps in Cloud • Containers; Orchestration (K8s), Deployment to cloud native, testing & sustainability • Cloud Native philosophy: APIs, microservices, serverless, managed data services • DevOps philosophy: CI/CD, version control, building pipelines, release strategies
Sustainable Data Engineering and AI Operations (10 credits)	• Efficient Data Science considerations (prepare, analyse and visualise) • Data Analytics with abstract Machine Learning (ML) Cloud Services • Use-Case scenarios with a sustainable perspective • Scaling considerations for Datasets

Semester 4	
Research Methods and Proposal Writing (5 credits)	• Conduct a literature review, academic writing, designing a research methodology, interpreting data, deriving conclusions, write a research proposal
Research Project (25 credits)	• Formulate a research question (RQ) relevant to sustainability in cloud computing, design a research methodology to address RQ, conduct the research, capture / analyse the results & writing up the work in a thesis. • Research areas: Comparing, contrasting & evaluating emerging technologies, practices and services for implementing sustainable applications in the cloud (encompassing infrastructure, code and data)

Outcomes for you

As cloud adoption accelerates globally, the need for cloud professionals with sustainability expertise has never been more critical.

This MSc goes beyond conventional cloud training by embedding environmental, ethical, and strategic insight into every module, ensuring that you graduate with a uniquely future-focused skillset.



Upon successful completion of this programme, you will be equipped to:

Design and manage sustainable cloud solutions that balance performance, cost, and energy efficiency using industry-standard platforms and Cloud Native technologies.

Leverage automation, data engineering, and AI operations to optimise cloud environments and drive responsible digital transformation.

Analyse and reduce the environmental impact of digital infrastructure through strategic, energy-conscious architecture and operational practices.

Communicate technical concepts clearly and ethically, collaborating across disciplines and with non-technical stakeholders to drive sustainability initiatives.

Apply advanced cloud principles to develop secure, scalable, and high-performing systems aligned with sustainable development goals.

Evaluate emerging trends and make informed decisions based on the latest innovations and challenges in sustainable cloud computing.

Award

Participants will receive a parchment for the Master of Science in Sustainable Cloud Computing upon successful completion of the programme.

Assessment

You'll be evaluated through a combination of continuous assessments, practical assignments, project work, and a final applied research project, ensuring learning outcomes are directly aligned with the challenges and demands of modern cloud roles.

As a tech organisation working across the globe, Liberty IT were delighted to collaborate with Technology Ireland ICT Skillnet and TU Dublin on the MSc in Sustainable Cloud Computing, ensuring its relevance to industry. We believe the programme equips graduates with essential skills to drive innovation through sustainable practices in technology, ultimately fostering a greener, more responsible future for all.

Alan Carolan
Principal Cybersecurity Analyst
Liberty IT

Academic eligibility

Prospective participants must either be

(a) Honours graduates (Level 8) with a major in computing or information technology, at a minimum award level of second class grade two honours (2.2). Computing and Information Technology graduates with a lower grade of level 8 award and some years of suitable experience may also qualify.

or

(b) Honours Graduates (Level 8) in Equivalent Cognate Fields with an award at 2.2. or higher.

Applicants with an Honours Bachelor's Degree (Level 8) or equivalent in a relevant field - such as science, mathematics, engineering, or business IS/MIS - at a minimum 2nd class honours grade 2 (2.2) level will be considered for entry if their prior work experience provides a suitable foundation for the programme. Candidates with a Level 8 qualification below 2.2 may also be eligible for admission if they have sufficient relevant experience.

Non-Standard Entry Requirements: Applicants who do not qualify as standard applicants will be assessed on a case-by-case basis based on TU Dublin's policy on Accreditation of Prior Experiential Learning (APEL).

For applicants whose first language is not English, please note the English language entry requirements.

Funding eligibility

The fees for this programme are part-funded by Technology Ireland ICT Skillnet. The reduced programme fees are €3,495 (per year).

Applicants must be working in a private or commercial semi-state organisation registered in the Republic of Ireland (Business, Consultant, Freelancer) to avail of the grant-aided fees. As a government-funded training network, we can only support those meeting these criteria.

Applicants who do not meet our funding criteria may in some cases be able to apply and pay the full yearly fees of €5,000 (per year) if there are available places.

Please speak with our programme team to learn more about the availability of funding.

info@**ictskillnet**.ie

Programme delivered in partnership with:

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TU DUBLIN
TECHNOLOGICAL UNIVERSITY DUBLIN

TU Dublin has five locations across Dublin, including major campuses in Grangegorman, Blanchardstown and Tallaght, and locations on Aungier Street and Bolton Street. While TU Dublin is already a leader in STEM disciplines, the University also supports the largest cohort of students of business, media, culinary arts, and the creative and performing arts. They are passionate about life-long learning, and as the largest provider of part-time education, they make an important contribution to the economic life of Ireland, enabling capacity building for the future.

Ready to develop your career in Sustainable Cloud Computing?

Our team is ready to answer any questions you might have regarding this programme. Send an email to info@ictskillnet.ie or use the enquiry form on our programme page and one of our programme leads will be delighted to assist you.

Successful applicants will be required to complete registration details both for Technology Ireland ICT Skillnet and for TU Dublin. Programme participants will become registered students of TU Dublin.

Start your learning journey today
with Technology Ireland ICT Skillnet

Learn More

Embrace the future with confidence, with Technology Ireland ICT Skillnet as your training partner.

Technology Ireland ICT Skillnet

Programme pillars

Our wide range of programme channels allows you to access training in the latest technologies driving business development.

- Artificial Intelligence
- Cloud
- Cybersecurity
- Data Analytics
- Innovation & Transformation
- Leadership
- Quantum
- Software Architecture
- Software Development

Industry approved

With the support of our Industry Steering Group, made up of some of Ireland's most progressive companies, you can be assured that our programmes will provide you with the most relevant and cutting-edge skills that industry demands.

Fidelity Investments, Hertz, Liberty Information Technology, Ericsson, IBM, Cisco, hp, Technology Ireland Ibec

Certification you can trust

Through our strategic partnerships with some of Ireland's most influential higher education institutions, we offer a range of certificate, diploma, and masters programmes, with awards accredited on the National Framework of Qualifications.

TU Dublin, Atlantic Technological University, MTU, DCU, Maynooth University, University of Limerick, National College of Ireland, University of Galway, TUS, UCD Dublin

Join 14,000+ learners who have transformed their careers with us. **Explore our range of courses ›**

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Technology Ireland ICT Skillnet

UNLEASH YOUR
UNSTOPPABLE POTENTIAL

Get in touch to invest in your development.
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Technology Ireland ICT Skillnet is co-funded by Skillnet Ireland and network companies. Skillnet Ireland is funded from the National Training Fund and the European Union through the Department of Further and Higher Education, Research, Innovation and Science.

Skillnet Ireland

Rialtas na hÉireann
Government of Ireland

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