Trinity College Dublin
Coláiste na Tríonóide, Baile Átha Cliath
The University of Dublin

Micro-credentials

Information Sheet and Descriptor

Definition

'Micro-credential' means the record of the learning outcomes that a learner has acquired following a small volume of learning. These learning outcomes have been assessed against transparent and clearly defined standards. Courses leading to micro-credentials are designed to provide the learner with specific knowledge, skills and competences that respond to societal, personal, cultural, or labour market needs. Micro-credentials are owned by the learner, can be shared and are portable. They may be standalone or combined into larger credentials. They are underpinned by quality assurance following agreed standards in the relevant sector or area of activity.

European Council, December 2021

Micro-credentials – range of credits from 5 ECTS to 10 ECTS. Note: 2.5 ECTS do not apply for the academic year 2022/23.

Micro-credentials:

- Consist of credit offered for continuing education/professional development purposes.
- Are specifically designed to upskill the workforce
- Have an identified learner market evidenced by enterprise need and demand
- Are co-created with enterprise in the development of the curriculum.
- Offer flexible delivery to meet the needs of enterprise and employees.
- Demonstrate innovation in pedagogy.
- May be stackable in the future.

MC = micro-credential

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HCI Pillar 3

Micro-Credentials: Descriptor

Please complete the Proposal Template in full. Incomplete proposal templates will not progress to the Micro-credential subcommittee for consideration.

Resources to support micro-credential development are available from the:

Academic Affairs website
Academic Practice website
MC exemplar
Micro-credentials: Resources

HCI Cluster and Work Package for the proposed micro-credential	**Cluster 2: Work-package 5 – Micro-credential Pilot Programme**
MC title:	**Climate Leadership Development**
School:	**School of Natural Sciences**
To whom will the MC be offered?	**Detail the specific learner market (both individual and enterprise learners) targeted by this MC including evidence of need and demand:** This MC is offered to a range of levels of public sector and private enterprise professionals who want to improve their Climate Leadership skills and knowledge. The specific learner market is cross-sectoral. The School of Natural Sciences has run similar (but non-accredited) programmes at Trinity College, in collaboration with EIT Climate-KIC and partners from across the EU every year between 2017 and 2022. The market demand is well tested and well understood with approximately 400 learners recruited into the programme from across the EU every year during this period. In 2023, the non-accredited programme was run exclusively in Ireland within the HCI Pillar 3 IKC3 project (www.ikc3.ie). Recrtuitment was driven through the enterprise partners of the IKC3 project, with a smaller cohort of 40 participants recruited from across a range of professional sectors in order to test an Ireland-specific market. Feedback from the learners has been excellent and the IKC3 project team has received several queries from prospective learners who wish to take the programme as an MC next year.
MC aims (max 250 words)	**How would you explain the MC in such a way that would encourage your intended learners (including those in enterprise) to register for it?** If you are a public-sector or private enterprise professional looking to up-skill in areas of climate leadership and sustainability then this microcredential is for you.

	The microcredential takes place fully online over six months, and is structured around two key components: 1. Monthly webinars to build your expertise in climate leadership. 2. Monthly small group mentoring to support your professional development. You can expect to build your professional network and gain key knowledge specific to climate leadership. You will work on an individual professional development plan to showcase your climate leadership skills and demonstrate how these are relevant to your particular sector.
All MCs must be new but may include some content from existing modules.	**If you are using some content from existing modules/CPD courses/programmes, provide details below:** **Name of existing programme(s):** This is a new micro-credential, but it builds on on knowledge and design from several years of working with EIT Climate-KIC on the "Journey" programme (see https://journey.climate-kic.org/). **Name of existing module(s): N/A** **Detail how successful this module has been in terms of recruiting learners and engaging with enterprise:** Between 2017 and 2022 approximately 400 learners were recruited from across the EU each year. In some years almost 1000 applications were received. In 2023, a different market and focus were tested, and 40 professional participants were recruited from Ireland. Engagement with enterprise partners both within and external to the IKC3 project in 2023 helped to recruit participants, and develop and deliver the curriculum. **How will this content be adapted and used innovatively to create this new MC?** In 2023 the programme was reduced to 6 months and run fully online. The intention is to use a similar format for 2024, but with some differences in content depending on the final feedback received at the end of October 2023, and with inputs from several IKC3 public sector and enterprise focused workshops held during 2022 and 2023.
NFQ level (if applicable)	**NFQ level 9**
ECTS	*Note: 5 ECTS = 125 hrs student effort (1 ECT = 25 hrs student effort)* +0 5 ECTS
School (owner) and discipline	School of Natural Sciences

MC Coordinator *(member of academic / teaching staff)*	Quentin Crowley

State other Schools/external organisations involved in the delivery of the micro-credential (if applicable)	The MC will be co-delivered by academic and enterprise partners within the IKC3 project. These may include the following, depending on specific content areas:
	• External academic partners include:
	  ○ University College Dublin.
	  ○ Munster Technological University.
	• International Partners include:
	  ○ Climate-KIC.
	  ○ Agro Business Park.
	  ○ CLIC.
	  ○ Sustainable Innovations.
	  ○ University of Bologna.
	• Enterprise and professional partners include:
	  ○ Carbery Group.
	  ○ Kerry Group.
	  ○ Alltech.
	  ○ Devenish.
	  ○ Coillte.
	  ○ Gas Networks Ireland.
	  ○ IBEC.
	  ○ Chambers Ireland.
	  ○ Bord Iascaigh Mhara.
	  ○ The Rediscovery Centre.
	  ○ Circular Bioeconomy Cluster South-West.
	  ○ Irish Bioeconomy Foundation.
	  ○ Shannon ABC.
	• IKC3 Local Authority Partners include:
	  ○ Dublin City Council.
	  ○ Kerry County Council.

Enterprise/Profession Connection	**Specify the enterprise sector(s)/profession(s) targeted by the MC:** Given that climate change affects all parts of society and all sectors, the MC targets all public sector areas and all private enterprise. **What labour market and/or skills need is addressed by the MC and give evidence of this need (max 250 words):** Ireland's National Skill Strategy 2025 has identified that education and training providers should focus more on providing skills development opportunities relevant to the needs of the learner, society, and the economy. The need for higher and further education initiatives to address a skills gap in the transition to a more sustainable society is

abundantly clear. For example, the Skills for Zero Carbon report (National Skills Council, 2021) identified a general skills gap for sectors delivering environmental goods and services. Such a skills gap is echoed by other sector-specific reports, for instance, Ireland's National Skills Strategy 2025 and the Green Skills for Further Education and Training 2021-2030.

Ireland's Climate Action Plan 2023 (CAP23) was published in late 2022, and a detailed Annex of Actions followed in early 2023. The Climate Action Plan 2021 (CAP21) included a Public Sector Climate Action Mandate, which was approved by Government on 4 July 2022. This updated Mandate was approved by Government on 16 May 2023. The Mandate applies to bodies covered by Climate Action Plan public sector decarbonisation targets, except for Local Authorities, Commercial Semi-State Bodies, and the School Sector, which have separate requirements. The Public Sector Climate Action Mandate 2023 includes a requirement at to "ensure all senior management (P.O. level or equivalent and above) complete a climate action leadership training course.

There is currently no dedicated MC available in Ireland to meet these specific Climate Leadership training needs for the public sector and private enterprise.

State the specific enterprise/employer-related skills addressed by the MC (max 250 words:
Strategic Planning: Develop and implement strategic plans to mitigate environmental risks, align initiatives with business objectives.

Stakeholder Engagement: Collaborate with employees, suppliers, customers, and communities to drive climate initiatives and gain support.

Environmental Policy and Compliance: Stay updated on regulations, assess compliance requirements, meet and exceed environmental standards.

Carbon Footprint Analysis: Conduct thorough analyses, identify areas for improvement, implement sustainable practices to reduce emissions.

Innovation and Technology Integration: Embrace innovation, evaluate and implement technologies for renewable energy, energy efficiency, and carbon capture.

Risk Management: Assess climate-related risks, develop strategies for adaptation, contingency plans for disruptions.

Sustainable Supply Chain Management: Consider environmental impact, promote sustainability throughout sourcing, manufacturing, transportation, and waste management.

Communication and Advocacy: Effectively communicate climate initiatives internally and externally, advocate for sustainable practices, and inspire action.

These skills provide a condensed overview of the key enterprise and employer-related skills for climate leadership.

<table>
<tr><td></td><td colspan="3">Detail how enterprise has been involved in the development of the MC and give details of your enterprise partners:
Enterprise partners have been part of the co-development and co-delivery of the programme every year since 2016 to the present year. This ensures the MC stays relevant and up-to-date. Enterprise partners form part of the consortium and are part of the consultative process.

How will the delivery of this MC facilitate participation of learners from enterprise (flexible delivery – online/blended/in-person, evenings/weekends etc)?
Delivery will be fully online, and generally over a lunch-time, or evenings as required by the learners. Experience has shown that a mixture of lunch-time and evening sessions works well, as documented by the high levels of engagement and learner retention.</td></tr>
<tr><td>Teaching staff & if appropriate institutional/enterprise affiliation</td><td colspan="3">Name all teaching staff involved and if external, the name of the identified enterprise partners.
External organisations and enterprise partners are provided above, and not repeated here.

Teaching staff at Trinity College may include:
• Dr. Quentin Crowley, School of Natural Sciences.
• Dr. Subhash Chandra, School of Natural Sciences.
• Dr Marcus Collier, School of Natural Sciences.
• Prof Mary Robinson, School of Natural Sciences.
• Prof Helen Sheridan, School of Pharmacy and Pharmaceutical Sciences.
• Dr Gaia Scalabrino, School of Pharmacy and Pharmaceutical Sciences.
• Ms Eleanor Saunders, Business School.</td></tr>
<tr><td>Min./Max. number of students</td><td colspan="3">Min. number of students: 10
Max. number of students: 100</td></tr>
<tr><td>Mode of delivery</td><td colspan="3">Consider the mode of delivery that will best suit your learner needs (both individual and enterprise learners).

Fully Online - all online</td></tr>
<tr><td>MC entry & admission requirements/pre-requisites (if applicable)</td><td colspan="3">A minimum Lower Second Class (2.2) award in an Honours bachelor’s degree or equivalent professional qualification</td></tr>
<tr><td>Proposed commencement date (Sept 24)</td><td colspan="3">September 2024</td></tr>
<tr><td>MC frequency, duration, and term</td><td>Frequency of delivery during the academic year:

Can be delivered once or twice per academic year,</td><td>Duration (e.g. 6 weeks). If block delivery applies provide details:

Four months</td><td>Indicate term(s):
Michaelmas ☒
Hilary ☒
Trinity ☒</td></tr>
</table>

<table>
<tr><td></td><td colspan="3">depending on demand.</td></tr>
<tr><td>Contact and independent study hours (note: 5 ECTS is equivalent to 125 student learning hours)</td><td colspan="3">Examples to consider/include are:
Lecturer/TA contact hours - the Lecturer/TA is present for a live session either in person or online.
Directed hours - engagement with required activities such as course materials provided by the lecturer, clinical attendance, internships, and practice or professional placement.
Peer contact hours - structured activities with peers (i.e. groupwork)
Self-directed hours - independent study
Assessment – individual time spent completing summative and/or formative assessments
Complete the table as appropriate:<table><tr><td>Learner contact and independent study hours</td><td>No. of Hours</td></tr><tr><td>Contact Hours such as Lecturer/tutorial contact hours</td><td>16</td></tr><tr><td>Self-directed/independent study</td><td>26</td></tr><tr><td>Assessment</td><td>26</td></tr><tr><td>Directed hours (please specify): Engagement with MC materials.</td><td>26</td></tr><tr><td>Peer contact hours (please specify): Collaborative, experiential learning via group discussions.</td><td>23</td></tr><tr><td>Other (please specify): Professional coaching and career development</td><td>8</td></tr><tr><td>Total</td><td>125</td></tr></table></td></tr>
<tr><td>MC learning outcomes (approx. 5)</td><td colspan="3">What are learners expected to do, know, and understand at the end of the MC?
Refer to the QQI framework for the Knowledge and Competencies required at NFQ level 9 (Addendum 1).
On successful completion of this micro-credential, learners will be able to:

LO1: Evaluate and apply a range of standard and specialised knowledge and tools for effective climate leadership.

LO2: Lead and initiate climate action activity to take significant responsibility for the work of individuals and groups.

LO3: Understand and reflect on public and corporate norms for sustainability and climate action and take action to change them where appropriate.

LO4: Identify methods to self-evaluate and take responsibility for continuing academic/professional development.

LO5: Utilise a Systems Thinking approach to demonstrate climate leadership in a wide variety of professional levels and contexts.</td></tr>
</table>

MC content areas. *(Bullet points can be used)* If the MC (or components) will be delivered in a blended format, identify the content that will be delivered online.	• **Climate Change as a Systemic Challenge** – addresses implementation challenges, the need for building climate capacity, developing multidisciplinary teams, and the need for systems thinking and cross-organisational collaboration. • **Introduction to Climate Leadership** - identification of the characteristics of climate policy that will pose distinctive challenges for leadership in response to the global climate challenge. • **Climate Justice and Transformational Leadership** – what skillset do leaders need to lead and embed transformational change and how can they embed principles of climate justice in their leadership strategy. • **Driving behavioural change** – understanding human perception from the perspective of individuals, organisations and society. How to communicate effectively both within your organisation and in your organisation's wider sphere of impact to drive climate action. • **Policy making for Climate Action** – understanding how policy is developed and what the current and possible future responsibilities are for public and private sectors. (MC content areas are mapped on the Government of Ireland mandated Climate Leadership training for public sector employees).

Teaching and Learning Methods (state pedagogical approach).
 	
Include the online environment(s) to deliver the MC e.g. Blackboard/ZOOM, if appropriate.
	What types of teaching and learning methods will be used to support learners in achieving the learning outcomes?
	
	Pedagogical approach
	The pedagogy is specially designed through the CCPOCS model (Content, Context, Peer teaching/coaching, Ownership, Continuous dialogue, Sensemaking) that underpins the entire Turas Learning Programme.
	
	The programme methodology is comprised of three dimensions:
	• **Inspiration**:
	  ○ Kick-off event.
	  ○ Monthly webinars.
	• **Experiential Learning**:
	  ○ Peer-to-peer knowledge transfer.
	  ○ Shared case studies.
	• **Personal Development**:
	  ○ Monthly coaching sessions.
	  ○ Individual learning reflection.
	
	Blackboard or Zoom, and Miro (online collaborative digital whiteboard) will be used for the online teaching and learning spaces.
	
	What is the rationale behind the selection of these strategies?
	• **How do they support the learning required to achieve each LO?**

The rationale behind the selection of these strategies allows learners to work actively and collaboratively through their insights and apply them in a practical, meaningful way within coherent ecological, social, economic, and societal contexts. It is envisaged tha the MC will attract learners from a wide range of sectors, the teaching and learning strategies maximise the flow of knowledge between the lecturers / content providers to the students, and also within the learner cohort through peer-to-peer knowledge transfer.

- **How do they support students in successfully completing the assessments?**

Active engagement: Learning strategies encourage active engagement and participation in the learning process. This can involve techniques like summarizing, note-taking, and asking questions. By actively engaging with the material, students gain a deeper understanding and are better equipped to apply their knowledge during assessments.
Effective study techniques: Learning strategies help students utilize effective study techniques such as spaced repetition, self-testing, and distributed practice. These techniques promote long-term retention of information, making it easier for students to recall and apply relevant knowledge during assessments.
Time management: Learning strategies aid students in managing their time effectively. They can help prioritize tasks, create study schedules, and allocate sufficient time for test preparation. Proper time management allows students to cover all the necessary material, reducing stress and increasing their confidence during assessments.
Problem-solving skills: Learning strategies foster critical thinking and problem-solving skills, which are essential for successfully completing assessments. Students learn how to analyse complex problems, break them down into manageable parts, and apply appropriate solutions. These skills enable students to approach assessment questions more efficiently and effectively.
Test-taking strategies: Learning strategies provide students with test-taking techniques that can improve their performance in assessments. These strategies may include methods for reading and interpreting questions, eliminating incorrect options, managing time during the exam, and organizing thoughts for written responses. Utilizing these strategies can enhance accuracy, reduce anxiety, and maximize scores.
Overall, the MC learning strategies empower students to become active learners, develop effective study habits, manage their time efficiently, enhance problem-solving skills, and employ effective test-taking strategies. By implementing these strategies, students are better prepared to tackle assessments and increase their chances of success.

- **How do they fit in with the mode of delivery and with the contact and independent study hours outlined above?**

The MC learning strategies play a crucial role in how effectively individuals engage with the mode of delivery and allocate their contact and independent study hours.
Given that delivery will be fully online, effective strategies include creating a dedicated study space, managing time effectively, and engaging with the course material through online resources, discussion forums, and multimedia content.
The allocation of contact and independent study hours also considers the appropriate learning strategies. For instance, students will receive guidance so that independent study time can be used for reviewing lecture notes, completing reading assignments, engaging with supplementary materials, and practicing skills through exercises or problem-solving. Contact hours, on the other hand are designed to provide

	opportunities for students to interact with instructors and peers, seek clarifications, ask questions, and engage in collaborative activities. Ultimately, the effectiveness of learning strategies within the given mode of delivery and contact/independent study hours will depend on the individual student's preferences, learning style, and adaptability to different learning environments. In this regard, there is flexibility in terms of different learning styles and strategies employed by the students. **How does this MC demonstrate innovation in pedagogy?** The MC pedagogy is specially formulated through a CCPOCS model that is unique and innovative. This pedagogical approach is based that co-created with EIT Climate-KIC and several academic and enterprise partners from around the EU. **Content:** Focus on content grounded in real-life circumstances and experiential (e.g., local visible consequence of climate change) and can be experienced by the learner or comes directly from their own experience. **Context**: External context (relevant to understanding and tackling the climate crisis) brought into the classroom, and real-life inputs sought to validate knowledge **Peer teaching/coaching:** Learner peer teach and coach each other based on their experience and the new experiences /insights they are encountering. Their knowledge is equal to that of different sources. **Ownership:** equal distribution of responsibility for learning amongst all learners, placing the onus on the learners to achieve their full potential as a unit **Continuous Dialogue:** discussion around inputs and learnings to continuously assess their helpfulness to meet learners and group goals **Sense-making**: Continuous iterative sense-making based on the "what-so what -now what -do /act what" approach to integrate experiential learning and foster sustainable personal growth.
MC assessment components *How will the MC be assessed?*	**How will the MC be assessed? (***Use assessments that are known to be effective in measuring the types of LOs used).* Access the Academic Practice online resource for guidance on selecting appropriate assessment strategies. The assessment strategy uses the summative and formative methodology to evaluate the learning outcomes. In addition, the MC assessment approaches are aligned with LOs, designed based on the CCPOCS pedagogy. In more detail, the MC will be assessed through: • Online discussion boards. • Report writing. • Online group presentations involving discourse and debate. • Online quiz. • Individual reflective learning report. **Briefly outline the rationale for your assessment choices, indicating how they assess the achievement of the relevant learning outcome.**

- Assessments are constructively aligned with the desired learning outcome.
- Given that one assessment type do not satisfy all learning outcomes a number of different assessment types have been chosen.
- The assessment strategy is mindful of the student assessment workload.

Complete the table:

Learning Outcome	Assessment Component (state assessment type)	Formative/ Summative	Group/ individual	% weighting
LO1: Evaluate and apply a range of standard and specialised knowledge and tools for effective climate leadership.	Online discussion board.	Summative	Group	20%
LO2: Lead and initiate climate action activity to take significant responsibility for the work of individuals and groups.	Online presentation.	Summative	Group	20%
LO3: Understand and reflect on public and corporate norms for sustainability and climate action and take action to change them where appropriate.	Online quiz	Summative	Individual	20%
LO4: Demonstrate climate leadership in a wide variety of professional levels and contexts.	Written report.	Summative	Individual	20%
LO5: Identify methods to self-evaluate and take responsibility for continuing academic/professional development.	Reflective essay.	Summative	Individual	20%
				100%

Micro-credential Specific learning environment(s) required to deliver the micro-credential.	**What specific learning environment(s), technologies and /or software are required to deliver/participate in the micro-credential?** (e.g. laboratory practice, clinical placement, reliable broadband, laptop/PC and headset for online sessions. Additional specific software applications may also be required.) • Reliable broadband, access to Blackboard, Microsoft Office (Word and PowerPoint), laptop/PC and headset, and access to email. • Trinity's mandatory Virtual Learning Environment (VLE), Blackboard Learn, will be used to host activities including Collaborate Ultra and discussion boards. It will also be used to provide structured access to all resources. Webinar recordings will be automatically published on the VLE. The assignments tool in Blackboard will be used to collect and give feedback on assessments. • Miro (an online whiteboard) will also be used for the online workshop and mind mapping – this is free to use for educational purposes. • For the system thinking model, LOOPY will be used. This is a tool for constructing causal loop diagrams. It is an open access online application.
Learner supports provided.	**What specific learner supports will be put in place to accommodate diverse learner needs? Consult:** Trinity Inclusive Project and Trinity Disability Service Individual modifications as required by individual students and to link in with appropriate services such as Trinity Disability Service. We also intend to use Blackboard Ally and ensure all presentations (where possible) have a pdf and that lectures are recorded. This may not always be possible if discussing confidential or sensitive topics.
State how the MC will be reassessed if failed (include timelines for reassessment)	Repeat submission of the failed elements. Resubmit those elements 8 weeks following the final submission date.
Pass standard & any special requirements for passing the MC	Resources: Calendar III To successfully complete an MC all requirements of the MC must be fulfilled. Fail: <49/100, Pass 50-69/100, Distinction 70-100/100
Penalties for late submission	• 10 % per week up to a maximum of two weeks; after that, marks will not be awarded for the work-this applies to all cases where permission has not been granted for the late receipt of work. • If the student is granted an extension, no late penalty will apply (provided work is submitted within the revised timeframe). Application for an extension should be made at least 24 hours before the deadline. Any subsequent attempt at the assessment will be treated as a re-submission/repeat. • In order to pass the MC, students must submit and pass all components. Failed assignments may be resubmitted during the supplemental period with the permission of the Court of Examiners, and capped at 50%.
Core reading / Library resources	Climate Justice, Mary Robinson, 2019. Global Climate Change Policy, Paul J.J. Welfens, 2022.

	Emergent Strategy: Shaping Change, Changing Worlds. Adrienne Maree Brown, 2017. How to Avoid a Climate Disaster: The Solutions We Have and the Breakthroughs We Need, Bill Gates, 2021. Speed and Scale: An Action Plan for Solving our Climate Crisis Now, John Doerr, 2021. The Five Dysfunctions of a Team, Patrick Lencioni, 2002. The limits to growth : the 30-year update, Donella H. Meadows, 2004. The New Corporate Climate Leadership, Edward Cameron, 2021. Thinking in systems : a primer, Donella H. Meadows, 2017.
Are there subject experts in other Schools/disciplines?	Yes **If yes, name of School and discipline:** School of Natural Sciences, Geography **Has the micro-credential been discussed with the other School/discipline and their DUTL/DTLP?** Yes
Proposed student fee	**EU/NEU €450 / €450**

Faculty Dean and School Executive Approval:

Date of approval of the proposed MC by the School Executive: Click or tap to enter a date.

Date of approval of financial information by the Faculty Dean: Click or tap to enter a date.

Signed by Head of School:

Date: 04/10/2023

Signed by Faculty Dean:

Date: 4_10_2023

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Checklist

Is the following attached with this micro-credential descriptor:	Yes (tick if applies)
Financial template	☒
Scheduling spreadsheet	☒
Signature of Head of School	☒
Signature of Faculty Dean	☒

Have you consulted with:	Yes (tick if applies)
The Micro-credentials Team	☒
Other Schools/Disciplines where there may be related disciplinary expertise	☒
Have you checked if there are similar MCs already on offer across Trinity? (www.tcd.ie/courses/micro-credentials)	☒

Submit completed form and associated documentation to micro-credentials@tcd.ie by 5pm on Tuesday, 3rd October 2023. Incomplete applications will not be considered.