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Level 8 Module Food Sector Sustainability

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M1: Module Descriptor Template

Module Code	Pre-requisite Module codes	Co-Requisite Modules code(s)	ISCED Code	Subject Code	ECTS Credits	NFQ Level (CPD)#
TBC	NA	NA			5	8
Module Title	Food Sector Sustainability					

This Header should be repeated on each page of the Module

School Responsible: Food Science and Environmental Health

TÁ LEAGAN GAEILGE DEN FHOIRM SEO AR FÁIL / AN IRISH LANGUAGE VERSION OF THIS FORM IS AVAILABLE

Module Overview:

In response to SDG 4.7, this module contributes to the National Strategy on Education for Sustainable Development's objective of "equipping learners with relevant knowledge, skills and values for becoming informed active citizens who take action for a more sustainable future".

For food-sector students committed to embedding sustainability in their professional learning and practice, this module explores how we can transform our food systems to be more resilient, ensuring the safe and nutritious food for everyone. It aims to provide authentic and transformative living-lab experiences of sustainable food systems through a community of practice, comprising faculty, students, industry and community stakeholders.

The module will provide a comprehensive overview of sustainable development goals (SDGs), targets and policies relating to food systems, diets and nutrition and the design-thinking processes underpinning the co-creating innovative solutions to complex food sustainability challenges.

Learning Outcomes (LO): (to be numbered)

For a 5ECTS module a range of 4-10 LOs is recommended

On Completion of this module, the learner will be able to

1	Demonstrate their transformation in sustainability literacy - knowledge, skills and mindsets to become committed to building a sustainable future – and its application to food production and consumption.
2	Critically analyse how food can be characterised by nutritional, health, safety, security and other socio-economic and environmental attributes, thereby informing their thinking on transitions towards more sustainable food systems.
3	Apply design-thinking, living-laboratory and circular economy principles to innovating safe, secure and resilient food-sector systems that protect our natural capital, co-creating transformative food sustainability knowledge in the process.
4	Demonstrate the ability to establish a professional network of connections within a progressive food-sector community, committed to changing how people think about food.
5	Make evidence-based recommendations on the future of food-sector education that will contribute to, and accelerate achievement of the UN's Sustainable Development Goals.

Indicative Syllabus:

Indicative syllabus covered in the module and / or in its discrete elements

An introduction to Sustainable Development: What is sustainable development? Role of Higher Education in Sustainable. The UN Sustainable Development Goals – An Interdisciplinary Perspective. The UN's Sustainability Literacy Test [LO1]

Sustainability Literacy: Carbon Cycle & Climate Change. Natural Resources. Life-Cycle Analysis. The Circular Economy. Basic Rights - zero hunger, water and sanitation and poverty reduction. Sustainable Cities – the built environment, transportation and urban resilience. Human Potential – quality education, good health, decent work and quality [LO1, LO4]

Sustainability Food Systems: Sustainable Food Systems. Policy and Practice. Paths to Sustainable Diets. Food Sustainability Indexes. Nutrition and Health. Bio Economy. Food Waste. Farms Systems, Ecology & Food Security. Oceans and Fisheries. Environmental Threats to Food Systems. Food Governance. Biodiversity. The World's Water Resources [LO2, LO4]

Innovation Processes for Sustainable Development: University SDG Commitments. Sustainability Competencies. Green Campus. Placed Based Learning and Living Lab Approaches. Design Thinking. Role of Higher Education in Achieving the SDGs LO3, LO5].

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Learning and Teaching Methods:

Flagship webinars will be delivered by the experts across TU Dublin. Where appropriate, guest lectures from the food-sector and sustainability communities will present contemporary topics aligned to content. Design-based learning will be fundamental to the more interactive workshops in which students will work closely with their lecturers and other academic programme stakeholders in a design thinking process to co-create a future-oriented food curriculum aligned to the sustainable development goals. A strong evidence-based approach underpins this module, in which its curriculum is informed by the latest scientific evidence and policy formulation in education for food sustainability.

In line with a partnership approach to SDG implementation, this module takes account of expertise across TU Dublin for co-delivery. In particular, delivery encompasses a partnership between the School of Food Science, & Environmental Health, the LTTC and various sustainability experts from across TU Dublin.

For delivery, the module comprises three broad content areas: [1] sustainability literacy, [2] food-sector sustainability and [3] innovation processes for sustainable development. For each area, six pre-recorded reusable webinars, approximately 30 minutes in duration, will be supplemented by live webinar events by guest-speakers. Three flagship workshops, encompassing the representative stakeholders of the School of Food Science & Environmental Health, will be facilitated using a design thinking methodology to map existing curriculum to the SDGs, to identify opportunities for enhancement in the curriculum and to provide learner experience of living-lab approach to innovating solutions to complex food-sustainability problems, co-creating a future-oriented food sustainability curriculum in the process.

A support tutorial on reflective practice and writing will be available to all participants.

Pre-Recorded Online Webinars: 18 Sessions x 30 Minutes	9 Hrs
Tutorials: 3 x 1 Hours	3 Hrs
Peer and Guest Lecturers 12 Sessions x 30 Minutes	6 Hrs
Co-Create Workshops 3 x 3 Hours	9 Hrs
Total Teaching Contact Hours	27
Total Self-Directed Learning Hours	73

Module Delivery Duration: One Semester

Indicate if the module is normally delivered for example over one semester or less, or over one academic year.

Assessment

Assessment Type	Weighting (%)	LO Assessment (No.)
SULITEST: Participants will complete the Sustainability Literacy Test twice and assessed on a post-completion reflection to evaluate transformation. Indicative assessment guidelines and marking rubric in handbook.	40	1, 2
Reflective Journal: Participants will record a reflective journal, detailing their learning journey through various webinars and workshops. Indicative assessment guidelines and marking rubric in student handbook.	30	1, 2, 3, 4, 5
Workshop Artefacts: Participants will partake in small team workshops with School stakeholders, mapping curriculum to the SDGs, identifying opportunities for change and undertaking short design project that addresses a wicked food sustainability problem. Workshop artefacts will include low-resolution designs – such as flip-chart posters, mind-maps, short video or podcast recordings or summary presentations.	30	1, 2, 3, 4, 5
*Weighting indicative of time and effort.		

Module Specific Assessment Arrangements (if applicable)

(a) Derogations from General Assessment Regulations	
(b) Module Assessment Thresholds	
(c) Special Repeat Assessment Arrangements	Coursework can be re-submitted for reassessment

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Recommended Resources

Lawrence, M. and Friel, S. (Eds.). (2019). *Healthy and Sustainable Food Systems*. Routledge.

Policy Reports

European Commission (2019) *Farm to Fork Strategy: For a Fair, Healthy and Environmentally Friendly Food System*. Available at: https://ec.europa.eu/food/sites/food/files/safety/docs/f2f_action-plan_2020_strategy-info_en.pdf

Government of Ireland (2014). *Education for Sustainability. The National Strategy on Education for Sustainable Development in Ireland*. Available at: <https://www.education.ie/en/Publications/Education-Reports/National-Strategy-on-Education-for-Sustainable-Development-in-Ireland-2014-2020.pdf>

Government of Ireland (2018). *The Sustainable Development Goals National Implementation Plan 2018 -2020*, DCCAE. <https://www.dccae.gov.ie/en-ie/environment/topics/sustainable-development/sustainable-development-goals/Pages/National-Implementation-Plan-2018---2020.aspx>

Government of Ireland (2019). *Climate Action Plan to Tackle Climate Breakdown*, DCCA. Available at: <https://assets.gov.ie/10206/d042e174c1654c6ca14f39242fb07d22.pdf>

QAA (2014) *Education for sustainable Development: Guidelines for UK Higher Education Providers*. Higher Education Academy and UK QAA.

UN (2020) *The State of Food Security and Nutrition in the World: Transforming Food Systems for Affordable and Healthy Diets*. Food and Agriculture Organisations of the United Nations.

Recommended Articles

Alexander, P, Brown, C, Arneith, A, Finnigan, J & Rounsevell, M 2016, 'Human appropriation of land for food: The role of diet', *Global Environmental Change*, vol. 41, pp. 88-98.

Andrews, D. (2015). The circular economy, design thinking and education for sustainability. *Local Economy*, 30(3), 305-315.

Brundtland, G.H., Khalid, M., Agnelli, S. Al-Athel, S., Chidzero, B. (1987) "Our Common Future", *World Commission on Environment and Development*, New York.

Favaloro, T., Ball, T., & Lipschutz, R. D. (2019). Mind the Gap! Developing the Campus as a Living Lab for Student Experiential Learning in Sustainability. *In Sustainability on University Campuses: Learning, Skills Building and Best Practices* (pp. 91-113). Springer, Cham.

Hamilton, H., 2013. Sustainable food lab learning systems for inclusive business models worldwide. *International Food and Agribusiness Management Review*, 16(1030-2016-82964), pp.33-38.

Wiek, A. Withycombe, L., Redman L.C. (2011). Key Competencies in Sustainability: A Reference Framework for Academic Program Development. *Sustainability Science*, Vol. 6, pp. 203–18, 2011.

Garnett, T. (2013). "Food Sustainability: Problems, Perspectives and Solutions". *Proceedings of the Nutrition Society*, 72(1), 29-39.

Middlecamp, C., and Bryan, T. (2020). Campus as Living Laboratory for Sustainability: Food. *In Chemistry Education for a Sustainable Society Volume 2: Innovations in Undergraduate Curricula* (pp. 33-45).

Version No:		Amended By	
Commencement Date		Associated Programme Codes	

Modules that are to be offered as Stand-Alone CPD Programmes must have an NFQ level assigned

*Details of the assessment schedule should be contained in the student handbook for the programme stage.

Date of Academic Council approval