

Modules in Sustainability in the School of Biosystems & Food Engineering

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School of Biosystems and Food
Engineering





How sustainable is my food?

BSEN10020

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School of Biosystems and Food Engineering

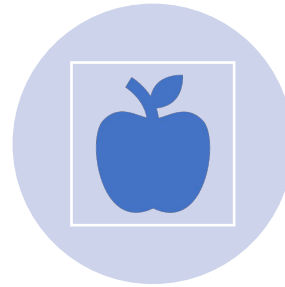
Available as an Elective module

Outcomes

On completion of this module, you should be able to



Explain the difference between a food item, a meal and a diet



Outline the reasons for considering both sustainability and nutrition when evaluating which foods to eat



Explain the environmental impacts caused by the food system, and the choice of foods you eat



Record and evaluate the food you eat and identify options to reduce the adverse impacts of your food choices

How the module will run

Lectures

1. What we mean by sustainability? (The Food System)
2. The impact of food (atmosphere)
3. The impact of food (water)
4. The impact of food (soil)
5. Land occupation and biodiversity
6. Food waste (Avoidance vs. valorization)
7. Estimating the nutritional value of food
8. Food communications
9. Food safety
10. Social aspects
11. Food security
12. Industry perspectives

1. Keeping a Food Diary
2. Calculating the impact of food (atmosphere)
3. Calculating the impact of food (water)
4. Calculating the impact of food (soil)
5. Calculating the impact of food (land use)
6. Calculating the impact of food waste
7. Nutritional LCA
8. Creating a poster
9. Creating a video
10. Uploading data to a central repository
11. What actions can you take?
12. Is our food sustainable?

Assessment

Assessment Type	Timing	Description	% Final Grade
ASSIGN	Week 4	7-day food diary	25
ASSIGN	Week 6	Calculation of the climate, water and land use impact of the food eaten	25
ASSIGN	Week 10	Information poster	25
ASSIGN	Week 12	Video	25



Intro to Carbon and Energy Footprinting BSEN20190

Module Coordinator Dr. Fionnuala

School of Biosystems and Food Engineering

Available as an Elective module and as an Option in some Programmes



Purpose and indicative content

Sustainability is a priority across sectors as organisations respond to sustainability targets to be achieved by 2030 for compliance, consumer and market retention purposes.

Engineers Ireland have identified a skills gap in understanding of how to implement sustainability.

This module will introduce the concept and practices in carbon footprinting to students in STEM fields.

Students will learn the principles of carbon footprinting in relation to international standards.

Students will develop competencies in carbon footprinting through project-based assignments aimed at development of an excel-based spreadsheet model to calculate their personal carbon footprint.

Outcomes

On completion of this module, you should be able to



Understand the basic concept of life cycle thinking, its relevance and use in different contexts



Comprehend standardised methodologies for carbon footprinting



Apply specific methodological steps of carbon footprinting



Perform a partial carbon footprint including analysing and evaluating the validity of specific steps, the quality and reliability



Interpret the results of the carbon footprint calculation and identify areas for improvement

How the module will run

Lectures

1. Introduction to Sustainability and Environmental Impacts
2. Life Cycle Thinking
3. International Standards for Life Cycle Assessment and Carbon Footprint Methodology
4. Goal and Scope
5. System Boundary
6. Data Inventory
7. Energy Footprinting
8. Life Cycle Inventory Analysis
9. Life Cycle Impact Assessment
10. Interpretation
11. Reporting
12. Case Studies

1. What is Sustainability?
2. Drawing the life cycle
3. Deciding on the goal and scope of products
4. Drawing system boundaries for products
5. Energy Footprinting Activity

Assessment

Assessment Type	Timing	Description	% Final Grade
ASSIGN	Week 5	Critical Review of Personal Carbon Footprint	20
ASSIGN	Week 8	An Excel-based Energy Footprint Model	30
ASSIGN	Week 12	Carbon Footprint Report	50

Questions?

<https://www.ucd.ie/biosystems/>