

Guide to ESD in practice

Interdisciplinary work-based learning module

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1. Intended outcomes

On successful completion of the module, students should be able to:

1. Discuss the significance of the following areas when auditing sustainability; carbon/energy, waste, procurement, travel, biodiversity, community [assessed via group written industry report].
2. Apply sustainability auditing training to analyse real-world data and conduct research on the environmental and social impact of an organisation's activities [assessed via group written industry report].
3. Use problem solving and decision-making skills to make appropriate recommendations in an industry-focused report [assessed via group written industry report and individual detailed implementation plan].
4. Demonstrate how insights into their own carbon footprint will translate into meaningful future behaviour, ensuring they are a responsible global citizen through forward planning and critique performance during the group project, then use self-reflection to articulate strengths and future development areas [assessed via professional reflection portfolio].

2. Participants

This sustainability and enterprise focused module was designed specifically with interdisciplinarity in mind and, as such, has been offered across four disciplines for its pilot. The module was designed to support students in the later years of their degree, when they are likely to be more focused on developing employability skills and have some experience of group work. The core module team comprised an academic with a Natural Sciences/ESD background, our institutional ESD Academic Engagement Officer (who was trained to deliver carbon literacy) and the Social Innovation Officer from the institution's Innovation Hub.

The pilot of the module ran in 2022-23 with 34 level 6 students from Biological Sciences, Creative Computing, Geography and Physics. Following the successful pilot, the module will take on greater numbers in the future (up to 200 a year), as the course becomes offered as an optional module on a greater number of degree programmes. For the pilot year we worked with two local small/medium-sized enterprises. The businesses were selected based on their willingness to provide sustainability data and answer questions from student groups within a specific timeframe. Students worked in groups of five/six with three groups being partnered with each business.

Our experience of running this module as a pilot showed that students identified that they gained insight and confidence from working with students in differing subject areas, so the module works best when there is a mixture of disciplines in each project group.

3. Activity/project

The Sustainability Enterprise Partnership Project (SEPP) module (15 credits) is a 'work related learning module' that was piloted in semester 1 of the 2022-23 academic year with third year undergraduate students. It was developed with our institutional Innovation Hub to provide sustainability audits for local business with student auditors. In this module, students work initially in groups and latterly individually, and are partnered with local businesses. They use the raw data (collected by the Innovation Hub) to produce two pieces of work that are then fed back to the business to use. The Written Industry Report (group) provides the business with an overview of their current sustainability performance, with reference to relevant local and national policy and legislation as well as industry benchmarking data. Suggestions for which sustainability initiatives to aim towards and how to achieve those are provided in the Detailed Implementation Plan (individual). Alongside these, students complete a Professional Reflection Portfolio which includes a Carbon Literacy Training evidence form (to allow them to gain Carbon Literacy accreditation) and some reflective questions about their skills development.

The module took a couple of years to develop. The module team piloted a non-credit bearing version of the module 15 months before the first delivery of the module as a summer internship opportunity and used reflections on this to inform our approach. Due to the unique interdisciplinary nature of the module, we then sought permission from the University Education Committee a year in advance where they recommended working with four programmes (who had expressed an interest in the module) for the first delivery of the module.

Over the next 12 months we worked with the programme teams to incorporate the module into their programme via the curriculum planning process. Another area that required consideration at this stage was timetabling. The module is blended delivery, which reduced the number of contact hours, but the module team worked with the timetabling team to ensure we could schedule the module for all students at a mutually compatible period. We involved student records with the module selection process, establishing a unique process to allow offering the module to a limited number of students across the four programmes.

The other key stakeholders we had to engage with were the potential business partners. We started looking for business partners six months before the start of the module to provide sufficient time to engage them with the project and collect the data we required before the module commenced.

We then embarked on designing the sessions within the module. Our Careers and Employability service supported us to ensure the module met the requirements of a 'work-related' module, with the design and assessment of the Professional Reflection Portfolio, and in signposting opportunities for employment opportunities relating to the module.

4. Assessment or evaluation

Students were assessed against the learning outcomes via:

- + written industry report (group) – 50% of the module mark (assesses “Discuss the significance of the following areas when auditing sustainability: carbon/energy, waste, procurement, travel, biodiversity, community; Apply sustainability auditing training to analyse real world data and conduct research on the environmental and social impact of an organisation's activities; Utilise problem solving and decision making skills to make appropriate recommendations in an industry focused report”)
- + detailed implementation plan (individual)- 40% of the module mark (assesses “Utilise problem solving and decision making skills to make appropriate recommendations in an industry focused report”)
- + professional reflection portfolio (individual) –10% of the module mark (assesses “Demonstrate how insights into their own carbon footprint will translate into meaningful future behaviour ensuring they are a responsible global citizen through forward planning; Critique performance during the group project, then use self-reflection to articulate strengths and future development areas”).

5. Useful resources

The Carbon Literacy Trust (2023) ‘*The Carbon Literacy Project*’. Manchester: The Carbon Literacy Trust. Available at: carbonliteracy.com

We would be happy to share our resources, including template documents and session plans, please email esd@le.ac.uk

6. Example of practice

The module was taken by Biological Sciences, Creative Computing, Geography and Physics students at the University of Leicester as 15 credit module for the first time in academic year 2022-23.

Relevant subject benchmark statements within these disciplines are:

Biosciences: appreciate the contribution of Biosciences to the innovations that characterise the modern world, and the potential of Biosciences graduates from this field to develop sustainable solutions to current and future challenges.

Computing: identify appropriate practices and perform work within a professional, legal and ethical framework – including data management and use, security, equality, diversity and inclusion (EDI) and sustainability – in the work that they undertake.

Geography: describe approaches to sustainability and sustainable development in relation to the complex interactions between societies and environments.

Learning points were:

- + the complexities of engaging with University structures to offer a module across different degree programmes
- + importance of supporting effective group work and uncertainty about working on an open-ended "project" module
- + emphasising the significance of writing for different audiences
- + importance of providing information on sustainability careers
- + high levels of attendance and general engagement with the module.

As the module is a recognised 'work-related learning module', students apply their degree knowledge to the sustainability sector by working with a business partner and through integrated sessions on networking and sustainability careers. Students also have the chance to receive accredited Carbon Literacy Training as a core part of the module.

All students passed the module on first attempt. In addition, we asked students to complete a module evaluation questionnaire which gave the following data.

The majority of students thought:

- + the module was well organised – 67%
- + the module objectives were clear – 75%
- + they achieved the module objectives – 83%
- + the reference material was readily available – 83%.

All students agreed that the module staff were accessible and helpful and that the module enhanced employability.

Was the module what you expected?

"Yes, it was a really great insight into professional working. Knowing that my work may have real-world value is exciting."

"Not entirely. Some parts, such as the carbon literacy training and what we needed to do for the assignments, seemed straightforward but it wasn't. The things we were taught were easy to follow and understand but doing the assignments was more difficult than anticipated. Doing research was more difficult than I thought and working with a group was difficult."

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Sarah Gretton

What advice would you give students considering this module in the future?

“Prepare for group work and collaboration, good for those who want to meet people outside of your degree, contains careers advice and activities, it is NOT a module to take if you just want an easier option.”

“Take it.”



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