

# Embedding Education Sustainable Development (ESD) into the Curriculum

This document is designed to raise awareness of where the [Sustainable Development Goals](#) (SDG's) support curriculum content and allows for both formative and/or summative assessment.

1) Course information				
<b>Faculty:</b>	FAS	<b>Programme Title:</b>	Two programmes: BSc Plant Sciences; MSc Conservation Management	
2) At point of design				
Which Programme Learning Outcome(s), are aligned to the <a href="#">SDG(s)</a> and their target theme/s				
Programme Learning Outcomes			Aligned SDG number/s	Target Theme/s
<p>Please note that the below only includes modules were the LOs address SDGs. I am teaching several other modules where SDGs are not in the LOs but are being taught (e.g. Plant Physiology, Biodiversity, Plant Diversity).</p> <p>L4: Demonstrate a knowledge and understanding of the relationship between biology and society.                      L5: Demonstrate detailed knowledge and understanding of the relationships and interactions plants and society.                      L6: Demonstrate a comprehensive knowledge and systematic understanding of the relationships and interactions between plants and society</p>			SDG 2 (zero hunger); SDG 3 (good health and well-being); SDG 12 (responsible consumption & production); SDG 13 (climate action); SDG 15 (life on land)	
Which Module Learning Outcome(s) are aligned to the <a href="#">SDG(s)</a> and their target/s				
Module code	Module Learning Outcomes	Optional or Compulsory	Aligned SDG number/s	Target Theme
Plants & People (SCI3336)	Plants & People: LO3: Ethnobotany - the cultural and social importance of plants, importance of plants in human well-being and horticulture. LO4: Ethical issues. Who owns a plant and its products?	Both compulsory	SDG 2 (zero hunger); SDG 3 (good health and well-being); SDG 12 (responsible consumption & production); SDG 13 (climate action); SDG 15 (life on land)	In Biodiversity (L4) Plant Physiology (L5) for example, we address key issues in climate sciences. This includes understanding past climates to anticipate biome and species responses to current and future climate threats.
Restoration & Conservation Planning (MCM4015)	Restoration & Conservation Planning: LO1: Synthesise and communicate complex scientific knowledge on the restoration of conservation. LO2: Devise a suitable strategy for the management of a conservation site, based upon a critical understanding and comprehensive synthesis of the management issues.			

### At point of design - continued

If not directly aligned what content allows students to the opportunity to explore issues, such as well-being, global citizenship, social responsibility, ethics? Please state:

In Biodiversity (L4) Plant Physiology (L5) for example, we address key issues in climate sciences. This includes understanding past climates to anticipate biome and species responses to current and future climate threats.

### 3) Materials and resources

In what ways are the materials and resources that you intend to use sustainable? i.e. Online working, reusable equipment...

All our texts are provided through digital copies through the library. Plants that are used during practical are given to students after to take home. When we undertake staining practical's (e.g. Biodiversity), we use reusable equipment, with very little waste. Our practical design is so that students for example need to collect chemicals from the tutors to avoid excessive use. All waste is recycled and we have a departmental sustainability plan for our labs and lab classes. Students mostly share materials, which again limits waste. The most unsustainable use of materials we have is when we take students to fieldtrips, as we have to drive them to the sites. For residential fieldtrips (e.g. Plant Diversity – Tenerife) we have now started to pay towards mitigation measures (e.g. CO2 capture). The funds are donated to a local project in Spain. When travelling by car, we try to reduce the number of cars used and travel in minibuses or 9-seaters.

Which core resources on your reading list include an ESD focus:

Yes. For example, in Restoration & Conservation planning many of the recommended texts are on restoring and improving habitats for conservation and human wellbeing. In Plants & People we provide reading material that covers aspects such as plant awareness disparity, discussions on why people need plants, how to conserve plants and what the current challenges are etc. Similarly, in Biodiversity we cover texts that include past climates and what we can learn from past mass extinctions.

#### 4) Inclusion of formative activities

How will your formative activities address SDG goals i.e.: groupwork, real-world applications, assessment literacy, social responsibility, engagement with online case studies? Provide details of at least one formative activity that complements an SDG goal.

Activity Method and Aim	SDG number	Target theme number
<p>Plants and People: We visit several botanical gardens and facilities where students discuss the importance of plants on human wellbeing. This includes an activity on assessing Southport Botanic gardens on its benefits to human wellbeing. We have several discussion sessions where we specifically address SDG 2,3,12 and 13. For example, we explore plant awareness disparity between ethnic groups, societal status all the way from the palaeolithic to modern times.</p> <p>One of my students is about to publish a paper on this, after she decided to write her dissertation on it. In Plant Physiology, we visit Liverpool World Museum where we study with our students' old plants collections to address questions about future plant productions and challenges.</p>	SDG 2,3,12 and 13	

#### 5) Subject focus in summative assessments

Are your Summative Assessments ESD focused: Yes  No  – if yes provide examples in the table below:

Assessment Method and Aim	SDG number	Target theme number
<p>1) Public information poster (conservation and restoration) 2) Conservation Management plan</p> <p>For example, for Restoration and Management Planning, student's device as part of their assessments a management plan (CW2) for a local conservation site. The work the students have undertaken in the past have directly been translated into management plans that are used by the conservation practitioners on site. CW1 for this module task the students to write a public information sign about the conservation value of a site they visited during the module. The best information sign is put up at the relevant site (paid for by EHU). For both assessment students work in groups for the data collection but then write up the work independently for CW2. Both activities are directly relevant to SDG 3,13 and 15.</p>	SDG 3,13 and 15.	

#### 6) Opportune teaching moments to implement sustainable practices

Opportune moments arise in the present. However, it is possible to be prepared for the more obvious opportunities that will arise such as inductions. Try to list the areas which you could raise student awareness of SDGs (e.g. plagiarism, integrity & ethics in subject area, energy efficiency, water efficiency, recycling, procurement and storage).

I think we could embed it in all aspects of teaching. We already do quite a bit for just the Plant Science programme (and several others). However, I think revising some of the LOs and including more SDG related learning content would be good. In particular we do not have much time to discuss the ethics of SDGs but we do address some aspects in individual sessions (e.g. intellectual properties in plant research).