Landscape Carbon Stock Assessment			
Module Code:	HSOR4017	**CAT credits:**	10
Mode of delivery:	Blended Learning	**NQF Level:**	4
Owning Institute:	Institute of Science and Environment	**HECoS Code:**	100819
Validation Start Date:	May 2024		

Aims of the Module

Understanding the storage and stocks of carbon in a landscape is key evidence to underpin sustainable land management. This module aims to develop your understanding of where carbon is stored within the landscape, to undertake field sampling and analysis to quantify landscape carbon, and to evaluate the landscape level drivers of change to that carbon store.

Intended Learning Outcomes

On successful completion, you will be able to:

1. Outline the function and behaviour of carbon in the environment, in particular transfers of carbon between atmospheric and terrestrial landscape stores.
2. Undertake field and laboratory analysis of landscape carbon stocks.
3. Describe and evaluate where carbon is being actively sequestered and stored within a managed landscape.
4. Identify land management strategies that can optimise the long-term storage of carbon within the landscape.

Indicative Module Content

These aspects of your module content are shown as indicative of the approach planned and as such might reasonably be expected to change and be updated over time.

- Introduction to the carbon cycle and carbon in the landscape;
- Land management and carbon stocks;
- Field sampling and laboratory analysis of soil organic carbon;
- Meeting net-zero and UK climate ambitions within the ELMs framework;
- How robust carbon stock assessment can support carbon finance schemes.

Indicative Student Workload (hours)	
Tutor Led Live	4
Practical Classes and Workshops	8
External Visits	8
Guided Independent Study	80

Formative Assessment –

Formative assessment provides an opportunity for you to receive feedback on work as part of your learning for the module. Formative work does not have marks awarded that contribute to the final module mark.

1.A self-assessment exercise will be provided upon registration for the module, to be

completed prior to the first taught session. This will guide the participant through an audit of the key skills and knowledge encountered in the module. The outcomes will assist the student to select the most appropriate reference resources and allocate independent study time effectively. The outcomes will also assist the tutor in pitching and differentiating the teaching according to the needs and prior experiences of the cohort and individuals.

2. The module tutor will provide formative verbal feedback during practical classes, workshops and fieldwork.
3. Opportunities for formative feedback through peer discussion will be provided at times during workshops and live tutor-led sessions online.

Summative Assessment –

Summative assessment provides the opportunity for you to demonstrate that you have met the learning outcomes for the module.

	Length/size of the assessment	ILOs assessed	% Weighting	Is anonymous marking possible?	Core element?‡
Portfolio	1500 words equivalent	All	Pass/Fail	No	Yes

‡ By default, your final module grade will be an aggregated mark. However, if this box is marked 'yes,' then you *must also* successfully pass this element of assessment in order to pass the module, regardless of the overall aggregated mark. If core element(s) of assessment are failed, the module will not be eligible for compensation. Further information on module compensation is available in the Academic Regulations.

Portfolio Task

The portfolio will comprise two elements:

- Spreadsheet of organic carbon content of samples analysed;
- Recorded presentation (10 minutes) or written report (1000 words) analysing the data and making land management recommendations to optimise landscape carbon stock.

Marking

The Programme Team have taken the following steps to remove unconscious bias from the assessment process:

- Diversity of prior experience, academic attainment and academic confidence among students joining this module is expected.
- Opportunities to develop the further skills and knowledge required to pass assessment will be provided within the module to all students.
- The assessment methods are chosen to allow flexibility in how students demonstrate the learning outcomes.
- An assessment rubric will be developed to assist in deciding the extent to which learning outcomes are demonstrated, limiting the subjectivity of assessment decisions.

Reassessment

Reassessment in the failed component(s) will be undertaken as stated in the Academic Regulations.

Compensation

This module is **not** eligible for compensation as a marginal fail within the limits set out in the Academic Regulations.

Indicative Core Bibliography

Essential reference resources for this module, listed below are publicly available, free of charge, online. This allows for the continued use of the resources after completion of studies.

- British Society of Soil Science (2023) Soil Carbon: what are carbon stocks and how can they be measured? Guidance note for Land Managers. Available at: https://soils.org.uk/wp-content/uploads/2023/06/BSSS_Science-Note_June-23_Soil-Carbon-Stocks_FINAL-DIGITAL_300623.pdf
- DEFRA (2021) Environmental Land Management Schemes: Overview: Available at: https://www.gov.uk/government/publications/environmental-land-management-schemes-overview/environmental-land-management-scheme-overview#sustainable-farming-incentive
- Hooker, H., & Wentworth, J. (2024). Carbon Offsetting. *POSTnote* 713. https://doi.org/10.1080/21550085.2023.2223805
- Donkersley, B. P., Carver, L., & Wentworth, J. (2021). UK Government Sustainable Land Management - Managing Land for Environmental Benefits. *POST Brief 42,* Available at: https://researchbriefings.files.parliament.uk/documents/POST-PB-0042/POST-PB-0042.pdf
- The Soil Carbon Project (2021) Monitoring Soil Carbon: a Practical Field, Farm and Lab Guide. Available at: https://calculator.farmcarbontoolkit.org.uk/sites/default/files/Monitoring-Soil-Carbon-a-practical-field-farm-and-lab-guide-Low-Res-Version.pdf

Additional Notes
n/a

Stand-Alone Study
Students who successfully complete this module as a stand-alone module will be eligible for a University transcript of credit.