Module Descriptor

Title	Sustainability and the Circular Economy		
Session	2026/27	**Status**	Published
Code	BIOL09045	**SCQF Level**	9
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Caroline Miller		

Summary of Module

The 2030 United Nations Sustainable Development Goals (UNSDGs) was established in 2015 by the United Nations. The UNSGDs were designed to act purposely as a blueprint to create a better and more sustainable future for everyone. There are 17 UNSDGs, all interlinked and recognise that action in one area will affect the outcome of others, as a result any development must bring harmony to social, environmental, and economic sustainability.

The world population is growing rapidly, hence there is a great need to develop clever green technologies to cater for consumers whilst also promoting inclusive, sustainable economic growth, employment, and acceptable employment for all. The circular economy is a model that balances production and consumption, establishing a sustainable economic growth over time. The circular economy serves to advance the world's societies by optimizing resources, reducing raw material consumption, and waste recovery via recycling or renewal into new products.

This module examines sustainability and the circular economy in a global context, with reference to the 2030 United Nations Sustainable Development Goals (UNSDGs). It explores how sustainability impacts society, the economy, and the environment locally and globally, and considers the ethical dimensions of sustainable development.

Learners will critically investigate the circular economy, including its principles, guidelines, tools, and related policies on climate change, and evaluate how these frameworks support the design of innovative and emerging green technologies. Through case studies, learners will analyse and reflect on strategies for creating a clean, green, and sustainable future, integrating environmental, social, and economic considerations.

Sustainability and the Circular Economy is a module that will help students develop the following 'I am UWS' graduate attributes:

U–universal: critical-thinking, analytical-thinking, ethically-minded, culturally-aware, collaboration, research-mindfulness, and social responsibility.

W–work ready: problem-solving, effective communication, motivation, leadership, entrepreneurship, and ambition.

S–successful: autonomy, innovation, creativity, resilience, drive, and transformation.

Module Delivery Method	On-Campus[1] ☒	Hybrid[2] ☐	Online[3] ☐	Work -Based Learning[4] ☐
Campuses for Module Delivery	☐ Ayr ☐ Dumfries	☒ Lanarkshire ☐ London ☐ Paisley	☐ Online / Distance Learning ☐ Other (specify)	

Terms for Module Delivery	Term 1	☐	Term 2	☒	Term 3	☐
Long-thin Delivery over more than one Term	Term 1 – Term 2	☐	Term 2 – Term 3	☐	Term 3 – Term 1	☐

Learning Outcomes	
L1	Apply critical knowledge and understanding of the UN Sustainable Development Goals and circular economy principles to analyse global sustainability challenges.
L2	Critically analyse and evaluate sustainability and circular economy principles, policies, and tools, by assessing their social, economic and environmental impact and effectiveness across local and global contexts.
L3	Demonstrate critical reflection and evaluation of sustainable processes in the circular economy, assessing their effectiveness and limitations in addressing complex environmental and societal problems.
L4	Evaluate the opportunities, ethical dimensions, and limitations of emerging green and sustainable technologies in diverse contexts within a circular economy context.
L5	

Employability Skills and Personal Development Planning (PDP) Skills	
SCQF Headings	**During completion of this module, there will be an opportunity to achieve core skills in:**
Knowledge and Understanding (K and U)	**SCQF 9** Apply and critically evaluate knowledge and understanding of the core concepts of sustainability and the circular economy, analysing their impacts on society, the economy, and the environment. Demonstrate critical understanding and analytical skills by investigating and evaluating the design of green and sustainable technologies or processes to address complex societal, economic, and environmental challenges.

[1] Where contact hours are synchronous/ live and take place fully on campus. Campus-based learning is focused on providing an interactive learning experience supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus contact hours will be clearly articulated to students.

[2] The module includes a combination of synchronous/ live on-campus and online learning events. These will be supported by a range of digitally-enabled asynchronous learning opportunities including learning materials, resources, and opportunities provided via the virtual learning environment. On-campus and online contact hours will be clearly articulated to students.

[3] Where all learning is solely delivered by web-based or internet-based technologies and the participants can engage in all learning activities through these means. All required contact hours will be clearly articulated to students.

[4] Learning activities where the main location for the learning experience is in the workplace. All required contact hours, whether online or on campus, will be clearly articulated to students

Practice: Applied Knowledge and Understanding	**SCQF 9** Apply and critically evaluate knowledge and skills gained to assess the design, effectiveness, and limitations of green and sustainable technologies. Demonstrate analytical, creative, and innovative thinking by critically examining applications of sustainability and circular economy principles across industrial contexts. Manage and evaluate complex and unpredictable issues through the informed application of ethical frameworks, policies, and regulatory considerations related to sustainability, the circular economy, and climate change.
Generic Cognitive skills	**SCQF 9** Critically analyse and evaluate policies, guidelines, tools, and ethical frameworks underpinning sustainability, the circular economy, and climate change, recognising their scope, effectiveness, and limitations. Demonstrate original and critical thinking by questioning established codes of practice and identifying gaps, constraints, and opportunities for improvement.
Communication, ICT and Numeracy Skills	**SCQF 9** Communicate subject-specific knowledge and complex information clearly, accurately, and effectively in both written and oral forms, adapting communication for specialist and non-specialist audiences. Apply and critically evaluate ICT skills to support academic work in written and oral contexts, including the interpretation, analysis, and evaluation of graphical, numerical, and statistical data.
Autonomy, Accountability and Working with Others	**SCQF 9** Work effectively and professionally with peers to plan, conduct, and evaluate research and group activities, demonstrating teamwork, collaboration, and shared responsibility in producing high-quality outputs. Demonstrate autonomy and accountability through critical self-reflection and group reflection, evaluating individual and collective contributions to task completion and identifying areas for improvement.

Prerequisites	**Module Code**	**Module Title**
	Other	
Co-requisites	**Module Code**	**Module Title**

Learning and Teaching
In line with current learning and teaching principles, a 20-credit module includes 200 learning hours, normally including a minimum of 36 contact hours and maximum of 48 contact hours. Sustainability and the circular economy will be taught in Term 2. This module has been designed for students from all backgrounds and interests to effectively learn the connection between sustainability, the circular economy and how they affect us locally and globally in our society, economy, and environment. This module will arm students with important skills such as critical thinking, subject-based knowledge, problem solving, and effective communication. This module has an on campus approach with a blend of live sessions face-to-face, and independentonline study whilst fully meeting the learning outcomes. The

module will be delivered using a range of inclusiveand dynamic teaching methods such as multi-media lectures, engaging tutorials/seminars, active class discussions, informative videos, online activities, independent and group activities, and flipped classroom learning purposely for assessment tasks. Assessment methods are fair and designed to test the knowledge of students on what they learn in the module. Furthermore, lecturers will provide individual and/or group sessionsfor students who need additional guidance during the module.

Learning Activities During completion of this module, the learning activities undertaken to achieve the module learning outcomes are stated below:	**Student Learning Hours** (Note: Learning hours include both contact hours and hours spent on other learning activities)
Lecture / Core Content Delivery	12
Tutorial / Synchronous Support Activity	14
Asynchronous Class Activity	10
Independent Study	164
n/a	
n/a	
TOTAL	200

Indicative Resources

The following materials form essential underpinning for the module content and ultimately for the learning outcomes:

https://www.undp.org/sustainable-development-goals

https://unfccc.int/process-and-meetings/the-paris-agreement

https://circularecology.com/embodied-carbon-footprint-database.html

https://www.gov.uk/government/publications/circular-economy-package-policy-statement/circular-economy-package-policy-statement

https://ellenmacarthurfoundation.org/universal-policy-goals/overview

https://www.oecd-ilibrary.org/sites/1f1751da-en/index.html?itemId=/content/component/1f1751da-en

https://www.legislation.gov.uk/ukpga/2008/27/contents

https://www.gov.scot/policies/climate-change/

https://www.gov.uk/government/publications/sustainability-and-climate-change-strategy

https://www.eea.europa.eu/themes/climate/policy-context

https://www.gov.uk/government/publications/greening-government-sustainable-technology-strategy-2020/the-greening-government-sustainable-technology-strategy-2020-sustainable-technology-for-sustainable-government

(N.B. Although reading lists should include current publications, students are advised (particularly for material marked with an asterisk*) to wait until the start of session for confirmation of the most up-to-date material)

Attendance and Engagement Requirements

In line with the Student Attendance and Engagement Procedure, Students are academically engaged if they are attending and participating in all timetabled programme activities including on-campus and online teaching sessions, asynchronous online learning activities, placement, work-based elements, course-related learning resources, and complete assessments and submit these on time. **For the purposes of this module, academic engagement equates to the following:** Attendance to all on-campus classes and participation in group work activiites.

Equality and Diversity
The University's Equality, Diversity and Human Rights Procedure can be accessed at the following link: UWS Equality, Diversity and Human Rights Code. In line with current legislation (Equality Act, 2010) and the UWS Equality, Diversity, and Human Rights Code, our modules are accessible and inclusive, with reasonable adjustment for different needs where appropriate. Module materials comply with University guidance on inclusive learning and teaching, and specialist assistive equipment, support provision and adjustment to assessment practice will be made in accordance with UWS policy and regulations. Where modules require practical and/or laboratory based learning or assessment required to meet accrediting body requirements the University will make reasonable adjustment such as adjustable height benches or assistance of a 'buddy' or helper.
(N.B. Every effort will be made by the University to accommodate any equality and diversity issues brought to the attention of the School)

Supplemental Information

Divisional Programme Board	**Biological Sciences Health**
Overall Assessment Results	☐ **Pass / Fail** ☒ **Graded**
Module Eligible for Compensation	☐ **Yes** ☒ **No** **If this module is eligible for compensation, there may be cases where compensation is not permitted due to programme accreditation requirements. Please check the associated programme specification for details.**
School Assessment Board	Biology
Moderator	Roderick Williams
External Examiner	T Temple
Accreditation Details	
Module Appears in CPD catalogue	☐ **Yes** ☒ **No**
Changes / Version Number	2

Assessment (also refer to Assessment Outcomes Grids below)
Assessment 1
Portfolio of written work (50%)
Assessment 2
Oral Presentation (Individual) and Groupwork Poster Presentation (50% split 30/20)
Assessment 3

(N.B. (i) Assessment Outcomes Grids for the module (one for each component) can be found below which clearly demonstrate how the learning outcomes of the module will be assessed. (ii) An indicative schedule listing approximate times within the academic calendar when assessment is likely to feature will be provided within the Student Module Handbook.)

Component 1							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of written work	☒	☒	☐	☒	☐	50	0

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Presentation	☐	☒	☒	☒	☐	50	6

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		0
Combined total for all components						100%	6 hours

Change Control

What	**When**	**Who**
Original module planned for delivery at L10, module now reviewed to deliver at L9. Appropriate language changes to content, learning outcomes and assement to meet L9. Learning outcomes altered from 5 to 4 due to repetition in content.	Jan 2026	Caroline Miller