Module Descriptor

Title	Earth Systems		
Session	2026/27	**Status**	Published
Code	BIOL08028	**SCQF Level**	8
Credit Points	20	**ECTS (European Credit Transfer Scheme)**	10
School	**Health and Life Sciences**		
Module Co-ordinator	Caroline Miller		

Summary of Module

To understand key aspects of the environment, we need to explore the systems that make it function. In this module we delve into the interconnected geological systems that shape the Earth's surface and climate. This module will challenge students to think holistically about the Earth as a comprehensive environmental system and introduce you to key concepts at a global scale.

Students will be introduced to global systems such as the geosphere, lithosphere, hydrosphere biosphere and cryosphere, as well as the transport of key global cycling elements (e.g., carbon, nitrogen). It will provide an overview of how each of these component's function – physically, chemically and/or biologically for earth sustainability, and explore the ways in which they interact or mutually depend on one another. You will also learn how the geological hazards associated with these processes and the methods involved in studying the Earth as a planet.

By undertaking this module students will develop a range of 'I am UWS' Graduate Attributes.

Universal – being ethically minded, where you will understand ethical principles, awareness and appreciation of the values and beliefs of others in relation to your own actions.

Work Ready – Develop problem solving and communication skills, including an ability to adapt what you are communicating to a specific audience.

Successful – by being autonomous and driven, you will develop skills to work independently and use ambition as a motivational tool.

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	Demonstrate a discerning understanding of earth processes (including Litho- hydro- atmo- cryo and biosphere).
L2	Apply knowledge and an understanding of the inter-connectivity of processes occurring within earth systems.
L3	Demonstrate practical laboratory skills appropriate to the area of earth systems, working safelyand carefully alone and with others. Handle experimental data in a manner which demonstrates theunderstanding of its significance.
L4	Demonstrate an understanding of the theories, paradigms, concepts and principles of physical processes within the Earth and its atmosphere with regards to sustainability.
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 8** Demonstrate awareness and understanding of key geochemical properties, including differences in chemical, biological and physical data sets.
Practice: Applied Knowledge and Understanding	**SCQF 8** Apply knowledge and skills to investigate and relay issues associated with earth system's functionality and the negative impacts that human activities have on their sustainability.

[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

Generic Cognitive skills	**SCQF 8** Use a range of basic scientific principles and techniques in approaches towards data collection.
Communication, ICT and Numeracy Skills	**SCQF 8** Convey complex information through the analysis and presentation of scientific data; written, orally and visually.
Autonomy, Accountability and Working with Others	**SCQF 8** Good and appropriate student conduct within the work and classroom environment.

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. This module covers a wide variety of theoretical, conceptual and practical areas, which require a range of knowledge and skills to be displayed and exercised. Delivery of its syllabus content therefore involves a diversity of teaching and assessment methods suitable to the learning outcomes of the module; these include lectures, structured tutorials (work closely integrated with the lecture material), completion and submission of written coursework making use of appropriate forms of IT and VLE, and independent study.	
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	20
Tutorial / Synchronous Support Activity	15
Laboratory / Practical Demonstration / Workshop	13
Independent Study	152
n/a	
n/a	
TOTAL	200

Indicative Resources
The following materials form essential underpinning for the module content and ultimately for the learning outcomes: The earth system: Kump, LR, 2013 (ISBN: 9781292034867) Publisher – Pearson The earth system / Lee R. Kump, James F. Kasting, Robert G. Crane. Third edition, new international edition.Pearson Education,2014Total Pages ii, 462 pages

Earth systems: processes and issues / edited by W.G.Ernst. Cambridge : Cambridge University Press, 2000
(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 on-campus at all classes.

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	Jamie Whitelaw
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
Series of in-class tests (40%)
Assessment 2
Portfolio of Practical work (60%)
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**
Class test (written)	☒	☒	☒	☐	☐	40	4

Component 2							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
Portfolio of practical work	☒	☐	☒	☒	☐	60	0

Component 3							
Assessment Type	**LO1**	**LO2**	**LO3**	**LO4**	**LO5**	**Weighting of Assessment Element (%)**	**Timetabled Contact Hours**
	☐	☐	☐	☐	☐		
Combined total for all components						100%	4 hours

Change Control

What	**When**	**Who**
Changing from 4 x class tests (worth 10% each) and a Portfolio of written work (60%) to 2 x class tests (worth 20% each) and Portfolio (worth 60% each).	January 2026	Caroline Miller
Hours adjustment	February 2026	R Freeburn