



MODULE SPECIFICATION

Part 1: Information			
Module Title	Atmosphere and Climate		
Module Code	USSKN4-15-2	Level	2
For implementation from	September 2017		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Health and Applied Sciences	Field	Applied Sciences
Department	Department of Applied Sciences		
Contributes towards	MSci Environmental Science BSc (Hons) Environmental Science		
Module type:	Standard		
Pre-requisites	The Earth (USSJFB 30-1)		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description
<p>In this module students will focus on studying the Earth's atmosphere and its central role in climate change.</p> <p>Specifically students will study:</p> <ul style="list-style-type: none"> - Atmosphere Structure, Dynamics and Mixing The structure and dynamics of the Earth's atmosphere, weather systems and . - Atmospheric Dynamics The composition of the atmosphere, Earth surface-atmosphere interactions, atmospheric chemistry and pollution. - Global Climate Detailed study of the atmospheric species and processes that contribute to climate change. - Palaeoclimate Earth history, Palaeoclimate records, climate proxies and geochemical methods. - Climate predictions Global Climate models (GCMs), climate feedbacks, risks, tipping points and future scenarios. <p>Experiential learning will be achieved through laboratory practicals, group fieldwork and hands-on atmospheric</p>

analyses. This will incorporate a diverse range of chromatographic and spectroscopic methods.

Specifically students will gain experience and develop skills in the following areas:

- Air sampling techniques
- Air pollution monitoring
- Approaches for both the characterisation and quantification of atmospheric species.
- Palaeoclimate methods, calculations and proxies
- An introduction to climate modelling.

Part 3: Assessment

There are two main assessment methods that will be utilised during this module.

Component A – Examination


This module represents a core scientific module for those students who will be undertaking the Environmental Science programme and focussing on the atmosphere. As such the best way to assess a diverse range of underpinning theory and knowledge will be through a written examination at the end of the module. Tutorial sessions (run at the end of lecture sessions) will focus on preparing students for the written examination.

Component B – Workshop Report

Students will get experience of the full range of atmospheric science from monitoring to modelling. The workshop report will contain two sections linked with workshops undertaken on atmospheric monitoring and atmospheric modelling. The outputs from these workshops will feed in to the workshop report. Students will be required to collect, process and analyse large datasets using advanced software. Some of the data will have been collected by the students, in addition data

Identify final timetabled piece of assessment (component and element)	Component A	
% weighting between components A and B (Standard modules only)	A: 50	B: 50
First Sit		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Written Exam (2 hours)	100	
Component B Description of each element		
1. Workshop Report (2000 words)	100	
Resit (further attendance at taught classes is not required)		
Component A (controlled conditions) Description of each element	Element weighting (as % of component)	
1. Written Exam (2 hours)	100	
Component B Description of each element		
1. Workshop Report (2000 words)	100	

Part 4: Teaching and Learning Methods	
Learning Outcomes	<p>On successful completion of this module students will be able to:</p> <ul style="list-style-type: none"> - Discuss the physical and chemical characteristics of the atmosphere (Component A). - Understand the key processes linked with changing climate and global environmental change (Assessed in component A). - Understand and evaluate the risks associated with future climate change (Assessed in components A and B). - Describe and compare the use of contemporary analytical and modelling techniques utilised in climate science (Assessed in components A & B) - Gain practical experience in a range of analytical techniques for atmospheric samples (Assessed in component B) - Gain experience of climate modelling (Assessed in component B)
Key Information Sets Information (KIS)	<p>The module will be taught by a combination of interactive lectures and laboratory practical workshops.</p> <p>A major feature of this module is the focus on the experiential learning of transferable skills with a particular emphasis on analytical skills (field-based, laboratory skills, data handling and modelling skills).</p> <p>Field classes, laboratory practical classes and computer workshops will be used in parallel to lectures to link practice and theory. This module focuses on the further development of general practical laboratory skills initiated at level one (The Earth) and data handling skills (Field Skills).</p> <p>Lectures (theory) and practicals (practice) will be integrated through the use of Blackboard and tutorials.</p> <p>Students are expected to self-study in their own time to help develop a deeper understanding of the subject. Full support will be given in this regard.</p> <p>Scheduled learning includes lectures, tutorials, and laboratory practical classes. Independent learning includes hours engaged with essential reading, assignment preparation and completion of laboratory workshop written reports.</p>
Contact Hours	

Total Assessment	Key Information Set - Module data																				
	<i>Number of credits for this module</i>					15															
	Hours to be allocated	Scheduled learning and teaching study hours	Independent study hours	Placement study hours	Allocated Hours																
	150	36	114	0	150																
	The table below indicates as a percentage the total assessment of the module which constitutes a;																				
	Written Exam: Unseen or open book written exam																				
	Coursework: Written assignment or essay, report, dissertation, portfolio, project or in class test																				
	Practical Exam: Oral Assessment and/or presentation, practical skills assessment, practical exam (i.e. an exam determining mastery of a technique)																				
	<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2">Total assessment of the module:</td> <td></td> </tr> <tr> <td>Written exam assessment percentage</td> <td></td> <td style="text-align: center;">50%</td> </tr> <tr> <td>Coursework assessment percentage</td> <td></td> <td style="text-align: center;">50%</td> </tr> <tr> <td>Practical exam assessment percentage</td> <td></td> <td style="text-align: center;">0%</td> </tr> <tr> <td></td> <td></td> <td style="text-align: center;">100%</td> </tr> </table>						Total assessment of the module:			Written exam assessment percentage		50%	Coursework assessment percentage		50%	Practical exam assessment percentage		0%			100%
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Coursework assessment percentage		50%																			
Practical exam assessment percentage		0%																			
		100%																			
Reading List	https://uwe.rl.talis.com/lists/9F94849C-B29B-897A-3184-DF3D0693F0E6.html																				

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First CAP Approval Date	31/5/2017			
Revision CAP Approval Date		Version	1	RIA 12112