MODULE SPECIFICATION

Part 1: Information			
Module Title	Atmosphere and Climate		
Module Code	USSKN4-15-2	Level	Level 5
For implementation from	2020-21		
UWE Credit Rating	15	ECTS Credit Rating	7.5
Faculty	Faculty of Health & Applied Sciences	Field	Applied Sciences
Department	HAS Dept of Applied Sciences		
Module type:	Standard		
Pre-requisites	the Earth 2020-21		
Excluded Combinations	None		
Co- requisites	None		
Module Entry requirements	None		

Part 2: Description

Overview: Pre-requisites: students must have already passed The Earth (USSJFB 30-1).

In this module students will focus on studying the Earth's atmosphere and its central role in climate change.

Educational Aims: See learning outcomes.

Outline Syllabus: Specifically students will study:

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.

Experiential learning will be achieved through laboratory practicals, group fieldwork and hands-on atmospheric 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.

Teaching and Learning Methods: See assessment strategy.

Part 3: Assessment

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

Component A – Examination (Online) with 24 hour submission window.

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.

First Sit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		50 %	Workshop report (2000 words)
Examination (Online) - Component A	✓	50 %	Online exam (24 hour submission window)
Resit Components	**Final Assessment**	**Element weighting**	**Description**
Report - Component B		50 %	Workshop report (2000 words)
Examination (Online) - Component A	✓	50 %	Online exam (24 hour submission window)

Part 4: Teaching and Learning Methods

Learning Outcomes

On successful completion of this module students will achieve the following learning outcomes:

Module Learning Outcomes	Reference
Discuss the physical and chemical characteristics of the atmosphere	MO1
Understand the key processes linked with changing climate and global environmental change	MO2
Understand and evaluate the risks associated with future climate change	MO3
Describe and compare the use of contemporary analytical and modelling techniques utilised in climate science	MO4
Gain practical experience in a range of analytical techniques for atmospheric samples	MO5
Gain experience of climate modelling	MO6

Contact Hours

Independent Study Hours:	
Independent study/self-guided study	117
Total Independent Study Hours:	117
Scheduled Learning and Teaching Hours:	
Face-to-face learning	33
Total Scheduled Learning and Teaching Hours:	33
Hours to be allocated	150
Allocated Hours	150

Reading List

The reading list for this module can be accessed via the following link:

https://uwe.rl.talis.com/modules/usskn4-15-2.html

Part 5: Contributes Towards

This module contributes towards the following programmes of study:

Environmental Science {Foundation} [Sep][SW][Frenchay][5yrs] BSc (Hons) 2018-19

Environmental Science {Foundation} [Sep][FT][Frenchay][5yrs] MSci 2018-19

Environmental Science {Foundation} [Sep][FT][Frenchay][4yrs] BSc (Hons) 2018-19

Environmental Science {Foundation} [Sep][SW][Frenchay][6yrs] MSci 2018-19