MODULE SPECIFICATION PROFORMA

Module Code:	SCI309

Module Title:	Science and the Environment

Level:	3	**Credit Value:**	20

Cost Centre(s):	GAHT, GAFS	JACS3 **code**:	G120

Faculty:	Faculty of Arts, Science and Technology	**Module Leader:**	Dr Ian Ratcliffe

Scheduled learning and teaching hours	40 hrs
Guided independent study	160 hrs
Placement	0 hrs
Module duration (total hours)	200 hrs

Programme(s) in which to be offered (not including exit awards)	Core	Option
BSc (Hons) Chemistry (with Foundation Year)	✓	☐
BSc (Hons) Forensic Science (with Foundation Year)	✓	☐
FdSc Animal Studies (with Foundation Year)	✓	☐
BSc (Hons) Equine Science and Welfare Management (with Foundation Year)	✓	☐
BSc (Hons) Animal Science (with Foundation Year)	✓	☐

Pre-requisites
None

Office use only
Initial approval: 12/12/2018 Version no:1
With effect from: 01/09/2019
Date and details of revision: Version no:

Module Aims
The aim of the module is for students to develop awareness of the scientific processes in the environment which surrounds us. The module will explore not only the ways the environment affects chemical and biological processes, but also the impact that “science” can have on the environment. The module will consider both historical aspects such as CFCs and the ozone hole and future challenges for scientists in protecting the environment.

Intended Learning Outcomes

Key skills for employability

KS1	Written, oral and media communication skills
KS2	Leadership, team working and networking skills
KS3	Opportunity, creativity and problem solving skills
KS4	Information technology skills and digital literacy
KS5	Information management skills
KS6	Research skills
KS7	Intercultural and sustainability skills
KS8	Career management skills
KS9	Learning to learn (managing personal and professional development, self-management)
KS10	Numeracy

At the end of this module, students will be able to		Key Skills	
1	Describe the basic chemical and biochemical processes of life.	KS1	
2	Demonstrate awareness of the cycling of chemical elements in the air, water and soil.	KS1	
3	Describe the impacts of anthropogenic activity on the global environment and how it may be influenced by policy and politics.	KS7	
4	Research scientific information and present in group and class discussion.	KS1 KS2 KS3	KS4 KS5 KS6

Transferable skills and other attributes

Reflection
Peer Learning

Derogations

None

Assessment:

Indicative Assessment Tasks:

Students will submit a portfolio based on a number of teaching sessions identified by the tutor. The portfolio will evidence:

- Students' own research into the topics
- Their contribution to group and class discussion (e.g. by reflective writing and peer assessment)
- A critical summary of class discussions.

Assessment number	Learning Outcomes to be met	Type of assessment	Weighting (%)	Duration (if exam)	Word count (or equivalent if appropriate)
1	1-4	Portfolio	100	n/a	2,500

Learning and Teaching Strategies:

Key topics will be delivered by means of short introductory lectures, followed by groupwork involving consideration of case studies, and tutor-led class discussion. Directed study exercises will encourage students to research around forthcoming topics and so enhance contribution to both groupwork and class discussion. Sessions identified as contributing to the portfolio will be recorded to assist with students' reflective practice.

Syllabus outline:

1) The molecules of life

2) Large scale processes in the environment - cycles etc

3) Impacts of industrialisation

4) Atmospheric Science and air quality

5) Water and Soil Pollution

6) Legislative approaches to environmental protection

7) Decomposition and rotting

8) Human Population

9) Sustainability – materials and energy

10) Climate change and climate modelling

Indicative Bibliography:
Essential reading
Withgott, J.H. and Laposata, M. (2018), *Essential Environment: The Science behind the Stories*. 6th ed. Harlow: Pearson Education Ltd.
Other indicative reading
Robbins, P. and Hintz, J. (2014), *Environment and Society: A Critical Introduction*. 2nd ed. Chichester: John Wiley & Sons Ltd. Harrison, R.M. (ed.) (2014), *Pollution: Causes, Effects and Control*. 5th ed. Cambridge: The Royal Society of Chemistry.