	Reference SCQF	e AS3054 SCQF
Module Title	Level	9
<b>Toxicology and Environmental Analysis</b>	SCQF Po	ints 15
	ECTS Po	ints 7.5
Keywords	Created ]	May 2002
Pollutants; Biodegradation, Persistence And Accumulation; Biological Responses to Pollutants;	Approved	I June 2002
Toxicity Testing	Amended	May 2011
	Version N	No. 3

## This Version is No Longer Current

The latest version of this module is available here

<b>Prerequisites for Module</b>	Instrumental analysi	s of samples,
AS2099 or its equivalent	spectrophotometric; case studies interpretation of results and pharmacokinetics; report writing.	
<b>Corequisite Modules</b>		
None.		
	<b>Indicative Student</b>	Workload
Precluded Modules		
	Contact Hours	Full Time
None.	Lectures/Tutorials	20
	Practical Work	20
Aims of Module		
	Directed Study	
To provide students with	Case Studies	30
knowledge in toxicological		
absorption, distribution,	Private Study	
metabolism and excretion and	Private Study	80
the ability to assess the impact	5	
of polluting substances in ecological systems.	Mode of Delivery	

Basic knowledge will be imparted through lectures, tutorials and practical workshops. Students will

**Learning Outcomes for** 

On completion of this module, students are expected to be able to:

- 1.Discuss the principal sources, fate and behaviour of chemical pollutants in air, water and land.
- 2.Explain the features of cell and tissue injury.
- 3.Discuss biological responses to environmental pollutant including the effects on genetic material and cell growth.
- 4. Utilise relevant scientific principles, examples and underlying methodologies to answer specific toxicological and analytical problems.

## **Indicative Module Content**

Pollution in the environment: review of natural and unnatural substances, xenobiotics, pollutants, degradation, persistence, accumulation, principle sources and behaviour of pollutants in air, water and land. Impact of pollutants on biological systems: cell and tissue injury caused by pollutants and their manifestations (in microorganisms, plants, animals, humans and ecosystems. Cellular recognition, immune be expected to contribute through the retrieval and study of relevant case studies.

## **Assessment Plan**

	Learning Outcomes Assessed
Component 1	1,2,3
Component 2	4

Component 2 is assessed by a presentation.

Component 1 is assessed by a closed book exam.

## **Indicative Bibliography**

- 1.WRIGHT, D. and WELBOURN, P. *Environmental Toxicology*. Current Edition. Cambridge University Press.
- 2.PHILIPS, R.B. Ecosystems and Human Health: Toxicology and Environmental Hazards. Current Edition. CRC Press.
- 3.NEWMAN, M.C. and UNGER, M.A. *Fundamentals of Ecotoxicology*. Current Edition. CRC Press.

response, defence mechanisms, biological indicators of pollution and epidemiological studies, Toxicity testing, definition of poisons and poisoning; study of the time-dose relationship and route of administration; distribution, phase 1 and phase 2 metabolism and elimination.