

Module code

SPC-3403

Type of module

Undergraduate: Chemistry – Elective

Environmental Chemistry



Modular credits

2

Total student
engagement

28 hours

Prerequisite

SPC-1203
Fundamentals of
Physical and
Spectroscopic
Chemistry

Anti-requisite

None

Aims

To provide students with an understanding of the chemistry of the environment, focusing on the atmosphere, hydrosphere, and terrestrial systems, as well as the chemical basis of pollution and its control.

Module learning outcomes (MLO)

On successful completion of this module, a student will be expected to be able to:

MLO 1

Analyse underlying chemical principles governing the atmosphere, hydrosphere, and terrestrial environments.

MLO 2

Analyse the chemical basis of pollution and its impacts on ecosystems and human health.

MLO 3

Apply chemical knowledge to evaluate methods for pollution control and waste management.

MLO 4

Design basic approaches to mitigate selected environmental issues.

Module contents

Atmosphere	Layers, composition and ozone	Aerosols and smog
Climate and pollution sampling	Hydrosphere	Water cycle
Dissolved species, metals and microbes	Pollution and treatment	Terrestrial Environment
Soil chemistry	Waste types, contamination, and management strategies	

Assessment

60%

Examination

40%

Coursework

Examination
60%

20%

20%

■ Examination — 60% ■ Assignments — 20% ■ Class Tests — 20%

Formative assessment

Weekly discussion
and feedback

Summative assessment

COMPONENT		WEIGHTING
Examination		60%
Coursework		40%
Individual		40%
Assignments		20%
Class Tests		20%

Graduate attributes and skills

Programme learning objectives (PLO) addressed

- 1 PLO 1 (Fundamental Knowledge in Chemistry)
- 4 PLO 4 (Communication and Collaborative Skills)

- 3 PLO 3 (Critical Thinking and Problem-Solving Skills)
- 6 PLO 6 (Digital Literacy and Lifelong Learning Skills)

Sustainability concept addressed

- 6 SDG 6 Clean Water and Sanitation
- 13 SDG 13 Climate Action
- 15 SDG 15 Life on Land

Digital skills/software used (not limited to)

- Word processing software (e.g. Microsoft Word)
- Spreadsheet and data analysis tools (e.g. Excel, Origin)
- Environmental data handling software (e.g. simulation/visualisation tools)
- Learning Management System (e.g. Canvas)

Micro-credentialling option

No

Stackable towards GenBESTARI Undergraduate Degree Programme or other relevant Lifelong Learning Programmes

No

Document details

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