

Module code

SEC-2402

Type of module

Undergraduate: Chemistry – Elective

Chemistry of the Environment



Modular credits

4

Total student
engagement

56 hours

Prerequisite

None

Anti-requisite

None

Aims

To equip students with a scientific understanding of chemical processes in the environment and their relevance to pollution, sustainability, and solutions for ecological challenges.

Module learning outcomes (MLO)

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

MLO 1

Analyse the chemical principles underlying environmental processes.

MLO 2

Apply chemical concepts to analyse environmental issues such as air, water, and soil pollution.

MLO 3

Evaluate solutions for managing environmental quality and pollution control.

MLO 4

Demonstrate awareness of sustainability principles in addressing global environmental challenges.

MLO 5

Work collaboratively to present scientific findings on environmental case studies.

Module contents

Biogeochemical cycles

Air pollution (smog, haze, acid rain, ozone depletion, global warming)

Water pollution and treatment (metals, nutrients, oxygen demand, monitoring, wastewater and potable water treatment)

Solid waste and soil contamination

Pollution modelling and environmental quality management

Sustainable solutions and case studies

Assessment

60%

Examination

40%

Coursework

Examination
60%

20%

20%

■ Examination — 60% ■ Class tests — 20% ■ Presentations — 20%

Formative assessment

Weekly discussions
and feedback

Summative assessment

COMPONENT	WEIGHTING
Examination	60%
Coursework	40%
Individual	20%
Class tests	20%
Group	20%
Presentations	20%

Graduate attributes and skills

University learning objectives (PLO) addressed

B Balanced & holistic individuals	E Ethical leaders	S Sustainable thinkers	T Transdisciplinary practitioners	A Adaptable & resilient lifelong learners	R Responsible global citizens	I Innovative problem-solvers
---	-----------------------------	-------------------------------------	--	---	--	---

B, S, T

Sustainability concept addressed

13	SDG 13 Climate Action
14	SDG 14 Life below Water
15	SDG 15 Life on Land

Digital skills/software used (not limited to)

- Word processing (e.g. Microsoft Word)
- Spreadsheet tools (e.g. Excel)
- Data analysis and visualisation software

Micro-credentialling option

No

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

No

Document details

Office ODVCE Document date 27 June 2026 Status New Approval GBF (12/02/2026)