

**City University of Hong Kong
Course Syllabus**

**offered by School of Energy and Environment
with effect from Semester A 2024/25**

Part I Course Overview

Course Title:	<u>Environmental Pollution: Theories, Measurement and Mitigation</u>
Course Code:	<u>SEE5212</u>
Course Duration:	<u>One semester</u>
Credit Units:	<u>3 credits</u>
Level:	<u>P5</u>
Medium of Instruction:	<u>English</u>
Medium of Assessment:	<u>English</u>
Prerequisites: <i>(Course Code and Title)</i>	<u>Nil</u>
Precursors: <i>(Course Code and Title)</i>	<u>Nil</u>
Equivalent Courses: <i>(Course Code and Title)</i>	<u>SEE8220 Environmental Pollution: Theories, Measurement and Mitigation</u>
Exclusive Courses: <i>(Course Code and Title)</i>	<u>Nil</u>

Part II Course Details

1. Abstract

The course aims to provide students the fundamental theories of environmental pollution, including key aspects of the pollution of air, water and soils, with a particular focus on both indoor and outdoor air. Additionally it will examine the application of measurement techniques and how underlying theory and monitoring creates a firm basis creating policy. Holistic training, which includes the cultural context of pollution, will equip the students with knowledge of theories and their application to solve complicated environmental pollution issues innovatively and independently.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	A2	A3
1.	Explain the nature of environmental pollution	20%		✓	
2.	Explain the drivers, principles and methods of environmental analysis;	15%		✓	
3.	Explain some key methods and techniques for pollution measurement;	15%		✓	
4	Relate the theories and measured pollution data to the development of environmental regulations;	30%		✓	
5	Apply the different pollution measurement techniques and create the methodologies to analyze the data to solve the environmental problems independently and innovatively	20%	✓		✓
		100%			

A1: Attitude

Develop an attitude of discovery/innovation/creativity, as demonstrated by students possessing a strong sense of curiosity, asking questions actively, challenging assumptions or engaging in inquiry together with teachers.

A2: Ability

Develop the ability/skill needed to discover/innovate/create, as demonstrated by students possessing critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines or applying academic knowledge to real-life problems.

A3: Accomplishments

Demonstrate accomplishment of discovery/innovation/creativity through producing /constructing creative works/new artefacts, effective solutions to real-life problems or new processes.

3. Learning and Teaching Activities (LTAs)

(LTAs designed to facilitate students' achievement of the CILOs.)

LTA	Brief Description	CILO No.					Hours/week (if applicable)
		1	2	3	4	5	
Lecture	Explain key concepts of environmental pollution and its management	✓	✓	✓	✓		2.25
Assignment						✓	0.25
Presentations		✓	✓	✓			0.25
Report		✓	✓	✓	✓		0.25

4. Assessment Tasks/Activities (ATs)

(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks/Activities	CILO No.					Weighting	Remarks
	1	2	3	4	5		
Continuous Assessment: 50%							
Project	✓	✓	✓	✓	✓	50%	
Examination: 50% (duration: 2 hrs, if applicable)							
						100%	

To pass a course, a student must do ALL of the following:

- 1) obtain at least 30% of the total marks allocated towards coursework (combination of assignments, pop quizzes, term paper, lab reports and/ or quiz, if applicable);
- 2) obtain at least 30% of the total marks allocated towards final examination (if applicable); and
- 3) meet the criteria listed in the section on Assessment Rubrics.

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1. Group Project	Ability to develop a specific pollution topic and explain it to others.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. Final Exam	Ability to analyse and solve practical problems related to environmental pollution and its mitigation.	High	Significant	Moderate	Basic	Not even reaching marginal levels

Applicable to students admitted from Semester A 2022/23 to Summer Term 2024

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
1. Group Project	Ability to develop a specific pollution topic and explain it to others.	High	Significant	Moderate to Basic	Not even reaching marginal levels
2. Final Exam	Ability to analyse and solve practical problems related to environmental pollution and its mitigation.	High	Significant	Moderate to Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus

(An indication of the key topics of the course.)

Nil

2. Reading List

2.1 Compulsory Readings

(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

Nil

2.2 Additional Readings

(Additional references for students to learn to expand their knowledge about the subject.)

1.	Mark L Brusseau, Ian L Pepper, Charles P Gerba, Environmental and Pollution Science, 3 rd Edition, Academic Press, 2019.
2.	Marquita K Hill, Understanding Environmental Pollution, 4 th Edition, Cambridge University Press, 2020.
3.	James Girard, Principles of Environmental Chemistry, Jones & Bartlett Learning, 3 rd Edition, 2013.