

# CORE 1140 - Environmental Science

## Learning Outcomes

By the end of this course, the students are expected to be able to:

- 1) describe the environment as an integrated system involving air, land, water and human activities;
- 2) apply basic concepts of environmental principles to real-life decision making and problem solving;
- 3) identify environmental hazards and recommend technological innovations tackling environmental problems;
- 4) recognize the importance of harmony among humans, the natural environment, and a sustainable-living society;
- 5) develop a broad interest and connect the knowledge to other scientific disciplines, technology, inventions and society;
- 6) evaluate the individual behaviors of human actors within their communities and describe how these behaviors may contribute to the achievement of a sustainable environment.

## Course Format

Two lectures per week.

## Course Assessment

- Midterm Examination (45 %)
- Final Examination (45%)
- In-class Quizzes through iPRS (10%)

## Course Coordinators and Instructors

Dr Cynthia YAU ([cynthiastyau@ust.hk](mailto:cynthiastyau@ust.hk))

Dr Cindy LAM ([envscindy@ust.hk](mailto:envscindy@ust.hk))

## Major Reference

Cunningham, W.P. and Cunningham, M.A. (2023) *Principles of Environmental Science: Inquiry and Application*. 10<sup>th</sup> Edition. McGraw-Hill Companies, Inc.

E-book version of the textbook is available via the publisher.

**CORE 1140 Environmental Science - Course Schedule (TENTATIVE)**

		<b>Lecture Topic</b>	<b>Instructor</b>
<b>Part 1: Matter &amp; Energy (Chapters 2 &amp; 13)</b>			
1)		Course Introduction; Matter and Elements of Life	Yau & Lam
2)		Energy Resources (I)	Lam
3)		Energy Resources (II)	Lam
<b>Part 2: Biomes &amp; Biodiversity (Chapter 5)</b>			
4)		Earth's Major Biomes (I)	Lam
5)		Earth's Major Biomes (II)	Lam
6)		Biodiversity & Its Significance (I)	Lam
7)		Biodiversity & Its Significance (II)	Lam
<b>Part 3: Human Populations &amp; Sustainability (Chapter 4)</b>			
8)		Human Populations & Sustainability (I)	Lam
9)		Human Populations & Sustainability (II)	Lam
<b>Part 4: Food &amp; Nutrition (Chapter 7)</b>			
10)		Food Security & Nutrition (I)	Lam
11)		Food Security & Nutrition (II)	Lam
12)		<b>Midterm Examination</b>	Lam & Yau
<b>Part 5: Environmental Health and Toxicology (Chapter 8)</b>			
13)		Environmental Health I	Yau
14)		Environmental Health II	Yau
15)		Environmental Toxicology	Yau
<b>Part 6: Atmosphere, Climate and Air Pollution (Chapter 9)</b>			
16)		Atmospheric Circulation and Climate	Yau
17)		Global Climate Change	Yau
18)		Air Pollution & Acid Rain	Yau
19)		Ozone Layer Depletion, Ocean Acidification	Yau
<b>Part 7: Water Resources and Water Pollution (Chapter 10)</b>			
20)		Water Cycle, Water Resources and Usage	Yau
21)		Water Conservation and Technology	Yau
22)		Wastewater Treatment and Eutrophication	Yau
23)		Water Pollution and Remediation	Yau
<b>Part 8: Solid Wastes (Chapter 13)</b>			
24)		Plastic Waste & Microplastics	Yau
25)		Solid Waste Management and Remediation	Yau