

THE EDUCATION UNIVERSITY OF HONG KONG

Course Outline

Part I

Programme Title	:	Bachelor of Science (Honours) in Integrated Environmental Management
Programme QF Level	:	5
Course Title	:	Environmental Science and Management
Course Code	:	SES2049
Department	:	Science and Environmental Studies
Credit Points	:	3
Contact Hours	:	39
Pre-requisite(s)	:	Nil
Medium of Instruction	:	English
Course Level	:	2

Part II

The University's Graduate Attributes and seven Generic Intended Learning Outcomes (GILOs) represent the attributes of ideal EdUHK graduates and their expected qualities respectively. Learning outcomes work coherently at the University (GILOs), programme (Programme Intended Learning Outcomes) and course (Course Intended Learning Outcomes) levels to achieve the goal of nurturing students with important graduate attributes.

In gist, the Graduate Attributes for Sub-degree, Undergraduate, Taught Postgraduate, Professional Doctorate and Research Postgraduate students consist of the following three domains (i.e. in short "PEER & I"):

- Professional Excellence;
- Ethical Responsibility; &
- Innovation.

The descriptors under these three domains are different for the three groups of students in order to reflect the respective level of Graduate Attributes.

The seven GILOs are:

1. Problem Solving Skills
2. Critical Thinking Skills
3. Creative Thinking Skills
- 4a. Oral Communication Skills
- 4b. Written Communication Skills
5. Social Interaction Skills
6. Ethical Decision Making
7. Global Perspectives

1. Course Synopsis

This is a foundational course intended to provide students with the overarching framework of environmental science and management, as well as, the concept of sustainable development. A brief overview of the current knowledge and issues of environmental science will be introduced, covering topics on human population, biodiversity, energy, resources utilization, pollution and its prevention etc. The rationale and approaches to environmental management will be discussed in both global and local scales, with scientific, social and political perspectives. Various environmental management approaches and market-based policy instruments, environmental labelling and Environmental Management System will also be elaborated.

2. Course Intended Learning Outcomes (CILOs)

Upon completion of this course, students will be able to:

- CILO₁ Explain the theoretical concepts of environmental science and management, as well as the principles of sustainable development.
- CILO₂ Identify the current local and global environmental issues, and illustrate the processes and impacts of human development on the environment.
- CILO₃ Explain the rationales and approaches to environmental management in monitoring anthropogenic impacts on the natural environment.
- CILO₄ Explain the tools used for environmental management and apply various environmental management approaches and market-based policy instruments into decision making processes.

3. Content, CILOs and Teaching & Learning Activities

Course Content	CILOs	Suggested Teaching & Learning Activities
1. Fundamentals of environmental science and management <ul style="list-style-type: none">- Environmental science: A multidisciplinary science- Environmental systems: Matter, energy, and life- Environmental degradation- Biodiversity and conservation- Ecosystem and communities- Environmental pollution- Environmental risk assessment- Management of natural resources- Environmental education- Environmental ethics- Environmental economics- Environmental policy and legislation	<i>CILO₁</i>	Lectures, case studies, and group discussion

2. Fundamentals of sustainable development <ul style="list-style-type: none"> - Three principles of sustainability - Environmentally sustainable society - Ecological footprint analysis 	<i>CILO₁</i>	Lectures, case studies, and group discussion
3. Local and global environmental problems <ul style="list-style-type: none"> - Human population growth and environmental impacts - Deforestation - Air/water/soil pollution - Food and water insecurity - Energy crisis and global warming - Solid waste management 	<i>CILO_{1,2,3}</i>	Lectures, video, case studies and group discussion
4. Environmental management approaches, tools and market-based policy instruments <ul style="list-style-type: none"> - Different approaches: problem-solving approach, specialist discipline approach, human ecology approach and political ecology approach etc. - Environmental labeling - Environmental Management System (EMS) - Quantity-based instrument - Market friction reduction instrument 	<i>CILO₄</i>	Lectures, case studies, and group discussion

4. Assessment

Assessment Tasks	Weighting (%)	CILO
(a) Group project: Students will deliver an oral presentation related to a current local/global environmental issue, and how the issue can be rectified.	20	<i>CILO_{1,2,3}</i>
(b) Group project: Students will write a report (2,500-3,000 words) related to a current local/global environmental issue, and how the issue can be rectified.	30	<i>CILO_{1,2,3}</i>
(c) Test: An exam/a quiz will be conducted to assess how well students understand about the knowledge of environmental science and management.	50	<i>CILO_{1,2,3,4}</i>

5. Required Text(s)

Cunningham, W. P., & Cunningham, M. (2018). *Environmental Science* (14th ed.). New York: McGraw Hill Education.

Sarkar, D., Datta, R., Mukherjee, A., & Hannigan, R. (Eds.). (2015). *An Integrated Approach to Environmental Management*. Hoboken, NJ: John Wiley & Sons.

Theodore, M. K., & Theodore, L. (2021). *Introduction to Environmental Management*. Boca Raton: CRC Press.

6. Recommended Readings

Barrow, C. (2006). *Environmental Management for Sustainable Development*. London: Routledge.

Enger, E. D., & Smith, B. F. (2022). *Environmental Science: A Study of Interrelationships* (16th ed.). Dubuque: McGraw Hill.

Krishna, I. M., Manickam, V., Shah, A., & Davergave, N. (2017). *Environmental Management: Science and Engineering for Industry*. Cambridge, MA: Butterworth-Heinemann.

Mushtaq, B., Bandh, S. A., & Shafi, S. (2020). *Environmental Management: Environmental Issues, Awareness and Abatement*. Singapore: Springer Nature.

Wright, R. T., & Boorse, D. F. (2016). *Environmental Science: Toward a Sustainable Future* (13th ed.). UK: Jones & Bartlett Pub.

7. Related Web Resources

Environmental Protection Department - Environmental Management System

https://www.epd.gov.hk/epd/english/how_help/tools_ems/tools_ems.html

Food and Agriculture Organization of the United Nations – Global Report on Food Crises

<http://www.fao.org/emergencies/resources/maps/detail/en/c/877611/>

International Organization for Standardization

<https://www.iso.org/home.html>

United States Environmental Protection Agency – Learn About Environmental Management Systems

<https://www.epa.gov/ems/learn-about-environmental-management-systems>

World Health Organization – Air pollution

https://www.who.int/health-topics/air-pollution#tab=tab_1

8. Related Journals

Environmental Geochemistry and Health

<https://www.springer.com/journal/10653>

Environmental Impact Assessment Review

<https://www.journals.elsevier.com/environmental-impact-assessment-review>

Environment International

<https://www.journals.elsevier.com/environment-international>

Environmental Management

<https://www.springer.com/journal/267/>

Environmental Pollution

<https://www.journals.elsevier.com/environmental-pollution>

Environmental Research

<https://www.journals.elsevier.com/environmental-research>

Journal of Environmental Economics and Management

<https://www.journals.elsevier.com/journal-of-environmental-economics-and-management>

Journal of Environmental Management

<https://www.journals.elsevier.com/journal-of-environmental-management>

Journal of Environmental Sciences

<https://www.journals.elsevier.com/journal-of-environmental-sciences>

Science of the Total Environment

<https://www.journals.elsevier.com/science-of-the-total-environment>

9. Academic Honesty

The University upholds the principles of honesty in all areas of academic work. We expect our students to carry out all academic activities honestly and in good faith. Please refer to the *Policy on Academic Honesty, Responsibility and Integrity* (<https://www.eduhk.hk/re/uploads/docs/00000000016336798924548BbN5>). Students should familiarize themselves with the Policy.

10. Others

Nil.