

# GE2303: SAVE THE EARTH: SUSTAINABLE DEVELOPMENT

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## Effective Term

Semester A 2022/23

## Part I Course Overview

### Course Title

Save the Earth: Sustainable Development

### Subject Code

GE - Gateway Education

### Course Number

2303

### Academic Unit

Architecture and Civil Engineering (CA)

### College/School

College of Engineering (EG)

### Course Duration

One Semester

### Credit Units

3

### Level

B1, B2, B3, B4 - Bachelor's Degree

### GE Area (Primary)

Area 3 - Science and Technology

### Medium of Instruction

English

### Medium of Assessment

English

### Prerequisites

Nil

### Precursors

Nil

### Equivalent Courses

Nil

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

The Chief Executive of the HKSAR stated in his 1999 Policy Address that building Hong Kong into a world-class city and making it a clean, comfortable and pleasant place in which to live would require a fundamental change in mindset. Every citizen, every business and every government department and bureau needs to start working in partnership to achieve sustainable development. Sustainable development does not focus solely on environmental issues. More broadly, sustainable development policies encompass three general policy areas: economic, environmental and social. This course will aim to raise students' awareness of all three areas.

### Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Identify the important factors in the implementation of sustainable development.	33	x		
2	Evaluate the environmental impact of the absence of sustainable development.	33		x	
3	Analyze the intrinsic relationships among economic development, environmental protection and social development in the implementation of sustainable development.	34		x	

#### 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.

### Teaching and Learning Activities (TLAs)

TLAs	Brief Description	CILO No.	Hours/week (if applicable)
1 Large class activities/ Lecture	The lectures will provide the fundamental knowledge on sustainable development to the students.	1, 2, 3	
2 Small group activities/ Lab	Students will have the opportunity to work on a team project to discover the effects of current lifestyles on the ecosystem. Students will also work in groups to carry out three different experiments in the CA and BCH laboratories.	1, 2, 3	

3	Field trips and site visits	A field trip will be arranged to allow students appreciate the effects of marine pollution on the ecosystem.	1, 2, 3	
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**Assessment Tasks / Activities (ATs)**

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Individual assignment (Assignment #1)	1, 3	10	
2	Group-based laboratory report (Assignment #2)	2, 3	20	
3	Individual field trip and site visit reports (Assignment #3)	2, 3	10	
4	Term project (group)	1, 2, 3	40	

**Continuous Assessment (%)**

80

**Examination (%)**

20

**Examination Duration (Hours)**

1.5

**Additional Information for ATs**

To pass a course, a student must obtain minimum marks of 30% in both coursework and examination components, and an overall mark of at least 40%.

**Assessment Rubrics (AR)****Assessment Task**

Individual assignment (Assignment #1)

**Criterion**

Ability to apply the principles of sustainable development to analyse a case.

**Excellent (A+, A, A-)**

Very High/high

**Good (B+, B, B-)**

Above average

**Fair (C+, C, C-)**

Average

**Marginal (D)**

Below Average/low

**Failure (F)**

Very low

**Assessment Task**

Group-based laboratory report (Assignment #2)

**Criterion**

Ability to present the conducted lab in a clear, thoughtful, scientific and organized format. Capability to accurately measure and analyse data for the findings.

**Excellent (A+, A, A-)**

Very High/high

**Good (B+, B, B-)**

Above average

**Fair (C+, C, C-)**

Average

**Marginal (D)**

Below Average/low

**Failure (F)**

Very low

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**Assessment Task**

Individual field trip and site visit reports (Assignment #3)

**Criterion**

Ability to present the learning experience of the field trip and site visit in a clear, concise, and thoughtful way.

**Excellent (A+, A, A-)**

Very High/high

**Good (B+, B, B-)**

Above average

**Fair (C+, C, C-)**

Average

**Marginal (D)**

Below Average/low

**Failure (F)**

Very low

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**Assessment Task**

Term project (group)

**Criterion**

Ability to demonstrate the knowledge in sustainable development. Ability to demonstrate critical thinking in the project.  
Ability to present the project.

**Excellent (A+, A, A-)**

Very High/high

**Good (B+, B, B-)**

Above average

**Fair (C+, C, C-)**

Average

**Marginal (D)**

Below Average/low

**Failure (F)**

Very low

**Assessment Task**

Examination

**Criterion**

Ability to explain the concept of sustainable development and to apply the knowledge to solve problems.

**Excellent (A+, A, A-)**

Very High/high

**Good (B+, B, B-)**

Above average

**Fair (C+, C, C-)**

Average

**Marginal (D)**

Below Average/low

**Failure (F)**

Very low

## Part III Other Information

**Keyword Syllabus**

Climate change and greenhouse effect, green manufacturing, green electronics, carbon-dioxide trading, ecosystems, marine pollution and conservation, water resources, solid and hazardous waste, renewable and reusable energy, toxicology and human health, culture and heritage, transportation and population dynamics, metropolitan areas and their formation, sustainable lifestyle.

**Reading List**

**Compulsory Readings**

Title	
1	Nil

**Additional Readings**

	Title
1	G T Miller, Environmental science: Working with the Earth, Brooks/Cole Thomson Learning, 2003, ISBN 0-534-38987-2.
2	Sustainable development success stories, Sales Number: E. 00.II.A.1, ISBN 9211044944.
3	W M Adams, Green development: Environment and sustainability in a developing world, 2009, HC59.7.A714 2009.
4	Council for Sustainable Development - Better Air Quality Engagement Process: <a href="http://www.susdev.org.hk/en/index.htm">http://www.susdev.org.hk/en/index.htm</a>
5	Sustainable Development in The Government of the Hong Kong Special Administrative Region: <a href="http://www.susdev.gov.hk/html/en/sd/index.htm">http://www.susdev.gov.hk/html/en/sd/index.htm</a>
6	International Institute for Sustainable Development: <a href="http://www.iisd.org/">http://www.iisd.org/</a>
7	UK Government Sustainable Development: <a href="http://www.defra.gov.uk/sustainable/government/">http://www.defra.gov.uk/sustainable/government/</a>
8	United Nations Division for Sustainable Development: <a href="http://www.un.org/esa/dsd/index.shtml">http://www.un.org/esa/dsd/index.shtml</a>
9	Wiley InterScience Journal, Sustainable Development: <a href="http://www3.interscience.wiley.com/journal/5346/home">http://www3.interscience.wiley.com/journal/5346/home</a>
10	Organization for Economic Co-operation and Development (OECD) - Sustainable Development: <a href="http://www.oecd.org/topic/0,3373,en_2649_37425_1_1_1_1_37425,00.html">http://www.oecd.org/topic/0,3373,en_2649_37425_1_1_1_1_37425,00.html</a>
11	Wikipedia: <a href="http://en.wikipedia.org/wiki/Sustainable_development">http://en.wikipedia.org/wiki/Sustainable_development</a>

**Annex (for GE courses only)**

**A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:**

Please indicate which CILO(s) is/are related to this PILO, if any (can be more than one CILOs in each PILO)

**PILO 1: Demonstrate the capacity for self-directed learning**

1, 2, 3

**PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology**

2

**PILO 3: Demonstrate critical thinking skills**

3

**PILO 4: Interpret information and numerical data**

2, 3

**PILO 5: Produce structured, well-organised and fluent text**

3

**PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation**

3

**B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.**

**Selected Assessment Task**

Laboratory reports