

**City University of Hong Kong
Course Syllabus**

**offered by Department of Architecture and Civil Engineering
with effect from Semester A 2017/18**

Part I Course Overview

Course Title:	Sustainable Architectural Design and Development
Course Code:	CA4174
Course Duration:	1 Semester (Some courses offered in Summer Term may start a few weeks earlier than the normal University schedule. Please check the teaching schedules with CLs before registering for the courses.)
Credit Units:	3
Level:	B4
Proposed Area: <i>(for GE courses only)</i>	<input type="checkbox"/> Arts and Humanities <input type="checkbox"/> Study of Societies, Social and Business Organisations <input type="checkbox"/> Science and Technology
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: <i>(Course Code and Title)</i>	Nil
Precursors: <i>(Course Code and Title)</i>	Nil
Equivalent Courses: <i>(Course Code and Title)</i>	SE4657 Sustainable Architectural Design and Development
Exclusive Courses: <i>(Course Code and Title)</i>	Nil

Part II Course Details

1. Abstract

(A 150-word description about the course)

The course aims at developing student's understanding of the principles of sustainable design, and the strategies and technologies to improve the sustainability and performance of buildings in relation to environmental impact, socio-cultural considerations and economic implications. The course will emphasize the use of objective criteria for assessing building sustainability, from meta issues to operational details.

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 concepts of building sustainability and sustainable development.		✓		
2.	Identify the strategies of environmental sustainability, social sustainability and economic sustainability and their applications in building design and development.			✓	
3.	Explore the practice of sustainable building design and construction in both the local and overseas building industry.			✓	
4.	Explain the development and implementation of various assessment tools for green buildings.				✓
* If weighting is assigned to CILOs, they should add up to 100%.		100%			

Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

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 self-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. Teaching and Learning Activities (TLAs)

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

TLA	Brief Description	CILO No.				Hours / week (if applicable)
		1	2	3	4	
Lecture	Explain the key principles, theories and standards for Sustainable Architectural Design and Development.	✓	✓		✓	
Workshop	Apply the key principles, theories and standards for Sustainable Architectural Design and Development on a Case Study.			✓	✓	

Semester Hours:	3 hours per week
Lecture/Tutorial/Laboratory Mix:	Lecture (Mix); Tutorial (Mix); Laboratory (Mix)
	3 hrs per week including lecture and workshop sessions

4. Assessment Tasks/Activities

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

Assessment Tasks / Activities	CILO No.				Weighting*	Remarks
	1	2	3	4		
Continuous Assessment: 60%						
Interim Case Study Assignment	✓	✓	✓		20%	
Final Case Study Assignment				✓	40%	
Examination: 40% (duration: 2 hours)						
					100%	

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%

5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)/ Pass (P) on P/F basis	Failure (F)
Interim Case Study Assignment	<p>CAPACITY to IDENTIFY sustainable design and development aspects on built projects.</p> <p>ABILITY to DISCUSS the scientific techniques to achieve and improve sustainable design and development.</p>	High	Significant	Moderate	Basic	Not even reaching marginal levels
Final Case Study Assignment	<p>ABILITY to APPLY suitable techniques to built projects.</p>	High	Significant	Moderate	Basic	Not even reaching marginal levels
Examination	<p>CAPACITY to RELATE and EXPLAIN the theories and principles of sustainable design and development, and DISCUSS sustainable design and development standards.</p> <p>ABILITY to USE and APPLY the scientific techniques in exercising sustainable design and development.</p>	High	Significant	Moderate	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.)

Principles of building sustainability; sustainable development; environmental sustainability; social sustainability; economic sustainability; carbon footprint; energy efficiency; zero carbon building; urban heat island; air ventilation assessment; bio-diversity; embodied energy; renewable/regional materials; recycling; adaptive reuse; indoor environmental quality; material and water conservation; life cycle cost and assessment; green building assessment.

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.)

1.	Nil
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2.2 Additional Readings

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

1.	Bauer, M., Mösle, P. and Schwarz, M. (2009) Green building: Guidebook for sustainable architecture, New York: Springer, 2009.
2.	Berge, B. (2001) The ecology of building materials, Oxford: Architectural Press.
3.	Brown, G.Z. and DeKay, M. (2001) Sun, wind and light. Architectural design strategies, New York: Wiley.
4.	Drake, S. (2007) The third skin: Architecture, technology and environment, New South Wales: UNSW Press.
5.	Feireiss, K. and Feireiss, L. (2008) Architecture of change: Sustainability and humanity in the built environment, Berlin: Gestalten.
6.	Hong Kong Green Building Council (2011) "Hong Kong report on the state of sustainable building 2011", World Sustainable Building Conference 2011, Helsinki, Finland.
7.	Kibert, C. J. (2007) Sustainable construction: Green building design and delivery, 2nd Edition, Hoboken: Wiley.
8.	Kwok, A. and Grondzik, W. (2007) The green studio handbook: Environmental strategies for schematic design, Burlington: Architectural Press.
9.	Steele, J. (1997) Sustainable architecture: Principles, paradigms, and case studies, New York: McGraw.
10.	Williams, D. E. (2007) Sustainable design: Ecology, architecture, and planning, Hoboken: Wiley.