City University of Hong Kong
Course Syllabus

offered by Department of Architecture and Civil Engineering
with effect from Semester A 2022/23

Part I Course Overview

Course Title:	Building Energy and Daylighting
Course Code:	CA5238
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:	P5
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	Nil
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

To study the energy consumption and conservation in buildings, building services energy saving issues, study of the provision of daylighting, control of luminous environments, the supporting building systems, and their integration into the overall building design.

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.	apply the methods to evaluate the energy consumption in buildings;		✓	✓	
2.	create suggestions to existing buildings for enhancing the energy saving;		✓	✓	
3.	apply assessment exercise for daylighting design in modern buildings;		✓	✓	
4.	criticize energy consumption for different building services components.			✓	✓
		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 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	
Lectures	Energy consumption and saving of different building services components and daylighting designs	✓	✓	✓	✓	
Tutorials	Case studies on building energy conservation and daylighting designs	✓	✓	✓	✓	

Semester Hours:	3 hours per week
Lecture/Tutorial/Laboratory Mix:	Lecture (2); Tutorial (1); Laboratory (0)

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: 50%						
Quiz/mid-term test	✓	✓			20%	
Daylighting assignment			✓		5%	
Building energy assignment	✓	✓		✓	25%	
Examination: 50% (duration: 2 hour(s))						
Examination					50%	
					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.)

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
Quiz/mid-term test	ABILITY to UNDERSTAND, ANALYZE and CRITICIZE on daylighting designs	High	Significant	Basic	Not even reaching marginal levels
Daylighting assignment	CAPACITY to ANALYZE and DISCUSS on daylighting designs	High	Significant	Basic	Not even reaching marginal levels
Building energy assignment	ABILITY to APPLY and CREATE suggestions for enhancing building energy conservation	High	Significant	Basic	Not even reaching marginal levels
Examination	ABILITY to UNDERSTAND, APPLY and ANALYZE energy consumption on different building services components and daylighting designs in modern buildings	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Quiz/mid-term test	ABILITY to UNDERSTAND, ANALYZE and CRITICIZE on daylighting designs	High	Significant	Moderate	Basic	Not even reaching marginal levels
Daylighting assignment	CAPACITY to ANALYZE and DISCUSS on daylighting designs	High	Significant	Moderate	Basic	Not even reaching marginal levels
Building energy assignment	ABILITY to APPLY and CREATE suggestions for enhancing building energy conservation	High	Significant	Moderate	Basic	Not even reaching marginal levels
Examination	ABILITY to UNDERSTAND, APPLY and ANALYZE energy consumption on different building services components and daylighting designs in modern buildings	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.)

Building energy consumption and conservation, building services energy saving issues, study of the provision of daylighting, control of luminous environments, the supporting building systems, and their integration into the overall building design. Specific topics include: effects of lighting on comfort and performance; lighting calculations and design; energy economy and sustainability and etc.

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

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

1.	Building energy and environmental modelling, London : Chartered Institution of Building Services Engineers, c1998.
2.	Feng Liu, Anke S. Meyer, John F. Hogan. Mainstreaming building energy efficiency codes in developing countries : global experiences and lessons from early adopters. Washington, D.C. : The World Bank, c2010.
3.	Fundamentals of building energy dynamics / edited by Bruce D. Hunn. Cambridge, Mass. : MIT Press, c1996.