

CA6242: ADVANCED TOPICS IN SUSTAINABLE URBAN DEVELOPMENT

Effective Term

Semester B 2024/25

Part I Course Overview

Course Title

Advanced Topics in Sustainable Urban Development

Subject Code

CA - Civil and Architectural Engineering

Course Number

6242

Academic Unit

Architecture and Civil Engineering (CA)

College/School

College of Engineering (EG)

Course Duration

One Semester

Credit Units

3

Level

P5, P6 - Postgraduate Degree

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

To understand the key concepts for the sustainable design of buildings, landscapes, and cities including concepts that form the core of internationally recognized sustainability rating and accreditation systems (e.g. U.S Green Building Council rating system (LEED) and the Hong Kong Green Building Council rating system (BEAM)); To examine sustainability issues of concern to built environment designers, such as resource conservation, urban growth, environmental justice, industrial development, social equity, sustainable agriculture, and economic development. The course emphasizes the student's ability to formulate special study areas in sustainable and urban development and conduct case studies or special studies of the subject matter.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if DEC-A1 app.)		DEC-A2	DEC-A3
1	Discover various issues for sustainability issues of concern to built environment professionals;		x		
2	Discover the sustainable design of buildings, cities and landscapes;			x	
3	Understand principles of rating methods (e.g. LEED, BEAM and etc.);			x	
4	Critically discuss issues of urbanization and sustainability, and their relationships.		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.

Learning and Teaching Activities (LTAs)

LTAs		Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures and seminars	Sustainable design methods of buildings, cities and landscapes; assessing sustainability	1, 2, 3	
2	Lectures and seminars	Urbanization and sustainability	1, 2, 3, 4	

Additional Information for LTAs

Semester Hours: 3 hours per week

Lecture/Tutorial/Laboratory Mix: Lecture (3); Tutorial (0); Laboratory (0)

Assessment Tasks / Activities (ATs)

ATs		CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assignments	1, 2, 3, 4	100	

Continuous Assessment (%)

100

Examination (%)

0

Assessment Rubrics (AR)

Assessment Task

Assignments (Applicable to students admitted before Semester A 2022/23 and in Semester A 2024/25 & thereafter)

Criterion

Ability to analyse issues of urbanization and sustainability

Accomplishment to demonstrate characteristics of urbanization and sustainability

Ability to measure urbanization and sustainability in built environments

Accomplishment to demonstrate essential knowledge of urbanization and sustainability

Excellent

(A+, A, A-) High

Good

(B+, B, B-) Significant

Fair

(C+, C, C-) Moderate

Marginal

(D) Basic

Failure

(F) Not even reaching marginal levels

Assessment Task

Assignments (Applicable to students admitted from Semester A 2022/23 to Summer Term 2024)

Criterion

Ability to analyse issues of urbanization and sustainability

Accomplishment to demonstrate characteristics of urbanization and sustainability

Ability to measure urbanization and sustainability in built environments

Accomplishment to demonstrate essential knowledge of urbanization and sustainability

Excellent

(A+, A, A-) High

Good

(B+, B) Significant

Marginal

(B-, C+, C) Basic

Failure

(F) Not even reaching marginal levels

Part III Other Information

Keyword Syllabus

Key concepts for the sustainable design of buildings and landscapes; U.S Green Building Council rating system (LEED) and the Hong Kong Green Building Council rating system (BEAM); LEED, BEAM and other accreditation systems; sustainability issues concerning planners, architects and engineers; resource conservation, urban growth, environmental justice, industrial development, social equity, sustainable agriculture, and economic development, sustainable design systems.

Reading List

Compulsory Readings

Title	
1	Nil

Additional Readings

Title	
1	John Lund Kriken with Philip Enquist and Richard Rapaport. City building: nine planning principles for the twenty-first century. New York: Princeton Architectural Press, c2010.
2	Asif Syed. Advanced building technologies for sustainability. Hoboken, N.J. : John Wiley & Sons, c2012.
3	Charles Bloszies. Old buildings, new designs: architectural transformations /foreword by Hugh Hardy. New York: Princeton Architectural Press, c2012.
4	Urban sustainability and governance: new challenges in Nordic-Baltic housing policies / Arild Holt-Jensen and Eric Pollock, editors. New York: Nova Science Publishers, c2009.
5	Urban sustainability in the context of global change: towards promoting healthy and green cities / editors, R.B. Singh. Enfield, N.H.: Science Publishers, c2001.
6	Achieving sustainable urban form / edited by Katie Williams, Elizabeth Burton and Mike Jenks. London: New York: E & FN Spon, 2000.
7	Charles J. Kibert. Sustainable Construction: Green Building Design and Delivery, 5th Edition. Wiley
8	Francis D. K. Ching, Ian M. Shapiro. Green Building Illustrated, 2nd Edition. Wiley