

CA2744: BUILDING TECHNOLOGY

Effective Term

Semester A 2022/23

Part I Course Overview

Course Title

Building Technology

Subject Code

CA - Civil and Architectural Engineering

Course Number

2744

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

Medium of Instruction

English

Medium of Assessment

English

Prerequisites

Nil

Precursors

Nil

Equivalent Courses

BC2744/BC2744F/BC2744P Building Technology

Exclusive Courses

Nil

Part II Course Details

Abstract

The course aims to provide students with an elementary framework of reference for the understanding of technology within the built environment, and to provide the basis for the evaluation of performance requirements for buildings and building elements and the choice of building forms, materials and construction technology.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Describe the basic types and forms of buildings	5	x	x	
2	Describe the basic elements of a building and their construction	15	x	x	
3	Explain the basic design concepts and functional requirements of building elements	30	x	x	x
4	Evaluate the relationship between users and performance requirements, and their impact to the choice of building forms, materials and construction technology	20	x	x	x
5	Evaluate the installation and assembling processes appropriate to production of buildings and the local construction practice	30	x	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	Lectures	On areas as identified in the keyword syllabus	1, 2, 3, 4, 5
2	Handout, On-line Teaching Resources, Recommended Reading, and Self-evaluation Exercise	On areas as identified in the keyword syllabus [through student's own effort before and after classes]	1, 2, 3, 4, 5
3	Presentation; Group discussions	On elected topics [in tutorial classes]	1, 2, 3, 4, 5

4	Film Shows and Site Visit	On elected topics [in tutorial classes, and as part of the out of the classroom activities]	5	
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Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assignment	1, 2, 3, 4, 5	15	
2	Presentations/ Group discussions	1, 2, 3, 4, 5	15	
3	Quiz	1, 2, 3, 4, 5	20	

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

2

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**

Assignment

Criterion

Ability to criticise the basic design concepts and functional requirements of building elements, evaluate the relationship between users and performance requirements, and their impact to the choice of building forms, materials and construction technology; and evaluate the installation and assembling processes appropriate to production of buildings and the local construction practice

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal level

Assessment Task

Presentations/ Group discussions

Criterion

Capability to discuss the basic design concepts and functional requirements of building elements, evaluate the relationship between users and performance requirements, and their impact to the choice of building forms, materials and construction technology; and evaluate the installation and assembling processes appropriate to production of buildings and the local construction practice

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal level

Assessment Task

Quiz

Criterion

Ability to use terminologies and basic concepts associated with the CILOs and keyword syllabus

Excellent (A+, A, A-)

High

Good (B+, B, B-)

Significant

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not even reaching marginal level

Assessment Task

Examination

Criterion

Ability to use terminologies and basic concepts associated with the CILOs and keyword syllabus, criticise the basic design concepts and functional requirements of building elements, evaluate the relationship between users and performance

requirements, and their impact to the choice of building forms, materials and construction technology; and evaluate the installation and assembling processes appropriate to production of buildings and the local construction practice

Excellent (A+, A, A-)

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Failure (F)

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Part III Other Information

Keyword Syllabus

Functions of a building. Forms of buildings. Site and soil investigation. The primary elements of building: foundation, column, wall, beam, floor, and roof. The secondary elements of building: staircases, doors, windows, ceilings, finishes and roofing. Choice of building forms, materials and construction technology under the various considerations, including environmental protection and sustainability; An introduction to Hong Kong BEAM. Installation and assembling processes. Local construction practice.

Reading List

Compulsory Readings

Title	
1	Andres, C.K., & Smith, R.C. 2009, Principles and Practices of Commercial Construction, Pearson/ Prentice Hall [Call # TH145 .S578 2009]
2	Emmitt, S., & Gorse, C.A. 2006, Barry's Advanced Construction of Buildings, Blackwell Publishing [Call # TH146 .E467 2006]
3	Foster, J.S. & Harington, R. 2007, Structure & Fabric, Part II, 7th Edition, Mitchell's Building Series, Longman [Call # TH145.F68 2007 Pt.2]
4	Handouts to be provided by the module instructor

Additional Readings

Title	
1	To be advised