CA2126: MEASUREMENT OF BUILDING WORKS

Effective Term
Semester A 2022/23

Part I Course Overview

Course Title
Measurement of Building Works

Subject Code
CA - Civil and Architectural Engineering
Course Number
2126

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
BC2126/BC2126F Measurement of Building Works

Exclusive Courses
Nil

Part II Course Details

Abstract

The course aims to provide students with an understanding of the principles of measurement as well as their applications in the building construction.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	comprehend the principles of measurement in a construction context		x		
2	understand the standard method of measurement for different work sections of building construction		x		
3	explore the building design for acquiring information for measurement			x	
4	apply measurement rules for taking-off quantities of the building works				x
5	discover the opportunities of using computer-aided measurement			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	Lecture	Delivering the lectures topics to students for their achievement of the CILOs	1, 2, 3, 4, 5	
2	Tutorial	Class assignments and discussions for students' reflection of the lecture topics	1, 2, 3, 4, 5	
3	Project	Discovery-based project allows students to explore building design in both architectural and structural aspects	1, 2, 3, 4	

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks (e.g. Parameter for GenAI use)
1	Assignment	1, 2, 3, 4	30	
2	Mid-term test	1, 2, 3, 4, 5	20	

Continuous Assessment (%)

50

Examination (%)

50

Examination Duration (Hours)

3

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

1. Capacity to explore building design for acquiring information for measurement and communicate by using query list and memorandum
2. Ability to apply measurement rules for taking-off quantities of building works

Excellent (A+, A, A-)

Exceptional

Good (B+, B, B-)

High

Fair (C+, C, C-)

Moderate

Marginal (D)

Basic

Failure (F)

Not reaching marginal level

Assessment Task

Mid-term test

Criterion

1. Capacity to explain the principles of measurement in a construction context and comprehend the SMM for different work sections of building construction
2. Ability to use measurement techniques for taking-off quantities

Excellent (A+, A, A-)
Exceptional

Good (B+, B, B-)
High

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not reaching marginal level

Assessment Task
Examination

Criterion
1. Capacity to comprehend the principles of measurement and the SMM for different work sections of building construction and discover the opportunities of using computer-aided measurement
2. Ability to apply measurement rules for taking-off quantities of building works

Excellent (A+, A, A-)
Exceptional

Good (B+, B, B-)
High

Fair (C+, C, C-)
Moderate

Marginal (D)
Basic

Failure (F)
Not reaching marginal level

Part III Other Information

Keyword Syllabus
Taking-off; Standard Method of Measurement; Bills of Quantities; Computer-aided measurement

Reading List

Compulsory Readings

	Title
1	Architectural Services Department, Government of HKSAR 2012, Model Bills of Quantities, Government Printer, Hong Kong. [Call no. is unavailable but the book can be downloaded from: http://archsd.gov.hk/en/publications-publicity/publications.aspx]

2	Hong Kong Institute of Surveyors 2005, Hong Kong Standard Method of Measurement of Building Works, 4th Edition, Hong Kong. [TH425.H853 2005]

Additional Readings

	Title
1	Picken, D.H. and Drew, D.S. 1996, Building Measurement in Hong Kong: Worked Examples, Hong Kong Polytechnic, Hong Kong. [TH435.P52 1991]
2	Seeley, I.H. 1999, Building Quantities Explained, MacMillan, Hampshire. [TH435.S43 1999]
3	Wills, C.J. 1998, Willis's Elements of Quantity Surveying, 9th Edition, Blackwell Science, Oxford. [TH435.W54 1998]
4	Ashworth, A. 2007, Willis's Practice and Procedure for the Quantity Surveyor, 12th Edition, Blackwell Science, Oxford. [TH435.W6853 2007]
5	Bowyer, J. 1985, Practical Specification Writing: for Architects and Surveyors, 2nd Edition, Hutchison, London. [TH425.B68 1985]
6	Goodacre, P.E. 1982, Worked Examples in Quantity Surveying Measurement, E. & F. N. Spon, London. [TH437.G64 1982]
7	The Aqua Group 1986, Pre-contract Practice for Architects and Quantity Surveyors, 7th Edition, Collins, London. [TH425.P73 1986]
8	Willis, C.J. 1994, Practice and Procedure for the Quantity Surveying, 10th Edition, Blackwell Scientific Pub., Oxford. [TH425.W55 1994]