CA2126: MEASUREMENT OF BUILDING WORKS

Effective Term
Semester A 2024/25

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 knowledge about the principles of building measurement and the applications of digital technologies in measurement.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	describe the principles of measurement in a building construction context		x		
2	explain the standard method of measurement for different work sections of building construction		x		
3	to acquire essential information for measurement			x	
4	apply measurement rules for taking off quantities of the building works				x
5	identify the opportunities of adopting digital technologies in 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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lecture	Students will engage in formal lectures to gain knowledge for achieving the CILOs	1, 2, 3, 4, 5	
2	Tutorial	Students will engage in tutorial activities to extend their learning by involving in class discussions and exercises	1, 2, 3, 4, 5	
3	Project	Students will participate in assignment projects to take off quantities by adopting manual and computerised approaches	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, 5	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 communication by using query lists 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 building construction context and comprehend the standard method of measurement 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 standard method of measurement for different work sections of building construction, and discover the opportunities of digital technologies in 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
Quantity take-off; Standard Method of Measurement; Bills of Quantities; Digital technologies

Reading List

Compulsory Readings

	Title
1	Architectural Services Department, Government of HKSAR, Model Bills of Quantities, Government Printer, Hong Kong. [Call no. is unavailable but the book can be downloaded from: https://www.archsd.gov.hk/en/reports/technical-documents.html]
2	Hong Kong Institute of Surveyors 2018, Hong Kong Standard Method of Measurement of Building Works, 4th Edition Revised 2018, Hong Kong. [TH425.H853 2018]

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]