

# CA4617: TEMPORARY WORKS DESIGN

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## Effective Term

Semester A 2025/26

## Part I Course Overview

### Course Title

Temporary Works Design

### Subject Code

CA - Civil and Architectural Engineering

### Course Number

4617

### 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

CA2673 Engineering Mechanics; or CA3632 Mechanics of Structures & Materials; or CA3703 Construction Methods and Equipment; or CA3704 Construction Engineering

Students must have attempted (including class attendance, coursework submission, and examination) the precursor course(s) so identified.

### Equivalent Courses

BC4617/BC4617F/BC4617P Temporary Works Design

### Exclusive Courses

Nil

## Part II Course Details

### Abstract

The course aims to provide students with the knowledge and ability in appreciating different types of falsework and formwork and enable students to design falsework and formwork for building construction.

### Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	identify alternative solutions to formwork and falsework design;		x		
2	design temporary support systems and prepare temporary works details;			x	x
3	apply the specific formwork and falsework systems for difficult site conditions;			x	
4	discovery of safety related construction problems and sequence of work.		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 lecture activities about the formwork systems; loading and moment diagrams; structural use of timber; concrete pressure; wall form and decking design; sequence of construction; safety use of formwork and village-type houses construction	1, 2, 3, 4	2 hours/week

2	Tutorial	Students will expand and consolidate their knowledge on topics by proposing alternative formwork systems and conducting temporary work projects design with submission calculation and detail drawings.	1, 2, 3, 4	1 hour/week
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**Assessment Tasks / Activities (ATs)**

	ATs	CILO No.	Weighting (%)	Remarks ("- " for nil entry)	Allow Use of GenAI?
1	Assignment	1, 2, 3, 4	20		Yes
2	Project Submission	1, 2, 3, 4	20		Yes
3	In-class assignment (Quiz)	1, 2	20		No

**Continuous Assessment (%)**

60

**Examination (%)**

40

**Examination Duration (Hours)**

2

**Minimum Continuous Assessment Passing Requirement (%)**

30

**Minimum Examination Passing Requirement (%)**

30

**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**

1.1 ABILITY to DISCUSS alternative solutions to formwork and falsework design

1.2 ABILITY to RECOGNIZE safety related construction problems and sequence of work

**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

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**Assessment Task**

Project Submission

**Criterion**

2.1 ABILITY to DISCUSS alternative solutions to formwork and falsework design

2.2 ABILITY to DESIGN temporary support systems and prepare temporary works details

2.3 ABILITY to APPLY knowledge of specific formwork and falsework systems for difficult site conditions

2.4 ABILITY to RECOGNIZE safety related construction problems and sequence of work

**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

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**Assessment Task**

In-class assignment (Quiz)

**Criterion**

3.1 ABILITY to APPLY loading, bending moment diagram, concrete pressure diagram

**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

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**Assessment Task**

Examination

**Criterion**

4.1 ABILITY to APPLY knowledge of formwork 4.2 ABILITY to DESIGN temporary support systems

**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

**Part III Other Information****Keyword Syllabus**

Introduction to formwork and falsework; temporary work systems and site restraints; types and materials of formwork; special, and proprietary forms. Concrete pressure on forms. Loading and moment on formwork. Types of beam form, decking and column formwork. Design of Decking. Falsework design; effects of wind load, falsework on soil. The use and applications of special forms. Discovery of safety related construction problem and sequence of work.

**Reading List****Compulsory Readings**

Title	
1	Nil

**Additional Readings**

Title	
1	Irwin, A.W. 1983, Falsework: a Handbook of Design and Practice, Granada, London.
2	Richardson, J.G. 1977, Formwork Construction and Practice. Slough: Cement and Concrete Association.
3	The Concrete Society 2012, Formwork: A Guide to Good Practice. Thomas Telford Ltd. United Kingdom.
4	British Standards Institution 1996 BS5975: Code of Practice for Falsework. BSI, United Kingdom.
5	British Standards Institution 1991, BS5268: Structural Use of Timber Part 2: Code of Practice for Permissible Stress Design, Materials and Workmanship. BSI, United Kingdom.
6	CIRIA Report 108, 1985. Concrete Pressure on Formwork. Construction Industry Research and Information Association.
7	Buildings Department 2004, Code of Practice on Wind Effects in Hong Kong, The Government of the Hong Kong Special Administrative Region. Hong Kong