

CA1167: ENGINEERING COMMUNICATION

Effective Term

Semester A 2025/26

Part I Course Overview

Course Title

Engineering Communication

Subject Code

CA - Civil and Architectural Engineering

Course Number

1167

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

Nil

Exclusive Courses

Nil

Part II Course Details

Abstract

This course aims to provide fundamental knowledge of visual and graphical communication methods and techniques used in architecture / engineering / building industry; introduce technique of report writing together with graphical presentation

using computer aided drafting software; and provide the ability to locate retrieval and apply technical information in fundamental architecture / engineering communications.

Course Intended Learning Outcomes (CILOs)

CILOs		Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	apply the drawing practice used in construction	40			
2	communicate through technical drawings using computer application	30	x		
3	communicate in an multi-disciplinary environment through building information modeling application	15	x		
4	communicate through technical reports	15			

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 and Hands-on	Lectures and Hands-on: Construction drawing standards and the principles of orthographic projection. Practice in 2D & 3D drawings by hand. Allow students to discover factors to be considered in using drawings as a means of engineering communication.	1	6
2	Lectures and Hands-on	Lectures and Hands-on: The use of computer application for producing 2D and 3D technical drawings. Allow students to master the state-of-the-art computer-aided design application.	2	9

3	Lectures and Hands-on	Lectures and Hands-on: Converting (and extracting) structural and non-structural information to (and from) the building information modeling (BIM) through computer application. Allow students to be familiar with the innovative BIM application.	3	12
4	Lectures and Hands-on	Lectures and Hands-on: fundamentals of report writing for engineering and construction.	4	12

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Quiz	1, 4	30	Summative Assessment	No
2	Assignment 1: Conceptual Design Project using Parametric Design Tool and BIM	1, 2, 3, 4	30	Summative Assessment	No
3	Assignment 2: Integrated Design Project focusing on report writing, AutoCAD and BIM	1, 2, 3, 4	40	Summative Assessment	No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)**Assessment Task**

Quiz

Criterion

Ability to apply the drawing practice used in architecture / construction and the fundamentals of report writing for engineering and construction.

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

Assignment 1

Criterion

Ability to communicate through technical drawings using computer application/building information modelling application.

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

Assignment 2: Integrated Design Project focusing on report writing, AutoCAD and BIM

Criterion

Ability to communicate in a multi-disciplinary environment through BIM application, technical drawings using computer applications and reports.

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

Nature of architecture / engineering / construction communications and the range of methods used; The use of technical drawings as an architecture / engineering communication technique and method; Engineering communication through report writing; Types of technical drawings and the principles of orthographic projection; Computer aided design; The basic concept of Building Information Modeling (BIM); BIM-based computer-aided design.

Reading List**Compulsory Readings**

Title	
1	Anderson, P. V., Technical communication: a reader-centered approach. Boston, MA: Wadsworth, c2011. 7th ed. (CityU Library, Circulation Collection PE1475 .A628 2011)
2	Styles, K., Architectural Press 1986, Working Drawings Handbook 2nd Edition.
3	Smith, Dana K., Hoboken, N.J. : Wiley 2009, Building information modeling : a strategic implementation guide for architects, engineers, constructors, and real estate asset managers.

Additional Readings

Title	
1	Walesh, S. G., Engineering your future: the professional practice of engineering. Hoboken, N.J.: J. Wiley & Sons, c2012. (CityU Library, Circulation Collection T56.8 .W36 2012)
2	Alder, A., Architectural Press 1988, New Metric Handbook. (NA2590.N488)
3	Paul F. Aubin, Clifton Park 2012, Revit Architecture. (NA2728 .A825)
4	Ray-Jones, A. RIBA Publications 1976, CI/SfB Construction Indexing Manual
5	Porter, T. et. All, Butterworth Architects 1988, Manual of Graphic Techniques: for architects, graphics designers and artists. vol.1-4.
6	Reekie, F., Edward Arnold Press 1976, Draughtsmanship: architectural and building graphics.
7	Kymmell, Willem, New York: McGraw-Hill 2008, Building information modeling : planning and managing construction projects with 4D CAD and simulations.