CA4526: INTEGRATED BUILDING PROJECT DEVELOPMENT (CIVIL ENGINEERING)

Effective Term
Semester A 2025/26

Part I Course Overview

Course Title
Integrated Building Project Development (Civil Engineering)

Subject Code
CA - Civil and Architectural Engineering
Course Number
4526

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
CA4522 Integrated Building Project Development (Construction Engineering and Management), CA4523 Integrated Building Project Development (Civil and Structural Engineering)

Exclusive Courses
Nil

Part II Course Details

Abstract

The aim of the Integrated Building Project Development (Civil Engineering) is to give students the opportunity to demonstrate their ability to develop a building project, as initiated by a client, from its preliminary design phase to construction planning through teamwork with students of other disciplines. In undertaking the course, the student will be able to demonstrate his/her capability of interpreting the client's requirements and transforming them into feasible solution. The student will also develop and demonstrate his/her abilities to apply skills and techniques in civil and structural engineering and contribute to the accomplishment of the requirements of the project client. In addition, students should be able to communicate with his/her teammates, to comprehend how problems of different disciplines are resolved, and to report and present his/her work as a part of the integrated building project outcome.

Course Intended Learning Outcomes (CILOs)

	CILOs	Weighting (if app.)	DEC-A1	DEC-A2	DEC-A3
1	Develop criteria based on the client's requirements and develop a conceptual solution based on the criteria;	20		x	x
2	Define the key issues of own discipline and comprehend the deliverables from disciplines;	10		x	x
3	Prepare site formation, storm water drainage plan and preliminary structural design, etc. related to the civil infrastructure;	20		x	x
4	Produce schematic diagrams and structural layouts of the civil infrastructure;	30		x	x
5	Create conceptual solution(s) through teamwork.	20		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.

Learning and Teaching Activities (LTAs)

	LTAs	Brief Description	CILO No.	Hours/week (if applicable)
1	Lectures, tutorials and workshops	Students will attend lectures and tutorials to acquire knowledge necessary for achieving CILOs. Furthermore, students will participate in workshops to enhance their learning through class discussions, guest lectures, and practical exercises.	1, 2, 3, 4, 5	3 hours/week

Assessment Tasks / Activities (ATs)

	ATs	CILO No.	Weighting (%)	Remarks ("-" for nil entry)	Allow Use of GenAI?
1	Oral presentations / written submissions	1, 2, 3, 4, 5	100		No

Continuous Assessment (%)

100

Examination (%)

0

Minimum Continuous Assessment Passing Requirement (%)

40

Minimum Examination Passing Requirement (%)

0

Assessment Rubrics (AR)

Assessment Task

Oral presentations / written submissions / group discussions

Criterion

Oral presentation
1.1 ABILITY to COLLABRATE to form a teamwork
1.2 ABILITY to ORGANIZE the presentation
1.3 ABILITY to clearly PRESENT the contents (including the use of English, eye contact, voice, and the use of technology)

Written submission
2.1 ABILITY to COLLABRATE as a team
2.2 ABILITY to ORGANIZE the submission
2.3 ABILITY to USE students' discipline specific knowledge in the project
2.4 ABILITY to graphically PRESENT the solutions
2.5 ABILITY to CONCLUDE the findings

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
Teamwork, interpretation of client's brief, problem identification, feasible solution generation, fulfilment of requirements, key details production, report production and presentation.

Reading List

Compulsory Readings

	Title
1	Nil

Additional Readings

	Title
1	Roy Meador, Guidelines for preparing proposals, 2nd edition, Lewis Publishers, 1991
2	Ros Jay, How to write proposals and reports that get results, Pitman, 1994
3	Simon Mort, Professional report writing, Gower, 1992
4	Smith, B.S. & Coull, A. 1991, Tall Building Structures: Analysis and Design, John Wiley & Sons, New York.
5	Taranath, B.S. 2012, Structural Analysis and Design of Tall Buildings: Steel and Composite Construction, CRC Press, Boca Raton, FL.
6	Paulay, T. & Priestley, M. J. N. 1992, Seismic Design of Reinforced Concrete and Masonry Buildings, John Wiley & Sons, New York.
7	Bhatt, P., MacGinley, T.J. and Choo, B.S. 2006, Reinforced Concrete - Design theory and examples, Taylor & Francis, New York.
8	Mosley, B., Bungey, J., Hulse, R. and Mosley, W.H. 2007, Reinforced Concrete Design to Eurocode 2, 6th Edition, Palgrave MacMillan, New York.
9	Building (Construction) Regulations 1990, Chapter 123B Building Ordinance, Hong Kong.
10	Buildings Department 2020, Code of Practice for Structural Use of Concrete 2013 (2020 Edition), the Government of the Hong Kong Special Administrative Region.
11	The Hong Kong Institution of Engineers, Structural Division 2022, An Explanatory Handbook to the Code of Practice for Structural Use of Concrete 2013, The Hong Kong Institution of Engineers, Structural Division.
12	Buildings Department 2024, Code of Practice for Foundations 2017 (2024 Edition), the Government of the Hong Kong Special Administrative Region.
13	Buildings Department 2019, Code of Practice on Wind Effects in Hong Kong, the Government of the Hong Kong Special Administrative Region.

14	Reynolds, C. E., Steedman, J. C. and Threlfall, A. J. 2008, Reynolds's Reinforced Concrete Designer's Handbook, 11th edition, Taylor & Francis, London.
15	Reynolds, C. E. and Steedman, J. C. 2003, Examples of the Design of Reinforced Concrete Buildings to BS8110, 4th edition, E. & F.N. Spon, London.
16	Institution of Structural Engineers 2002, Manual for the design of reinforced concrete building structures, London, UK.
17	Ambrose, J. 1997, Simplified Design of Concrete Structures, John Wiley & Sons, New York.
18	EN 1990: Eurocode - Basis of structural design
19	EN 1991 Eurocode 1 : Actions on structures
20	EN 1992 Eurocode 2 : Design of concrete structures
21	EN 1993 Eurocode 3 : Design of steel structures
22	Buildings Department, Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Geotechnical Engineers, the Government of the Hong Kong Special Administrative Region.
23	Buildings Department 1996, Fire Resisting Construction, the Government of the Hong Kong Special Administrative Region
24	Buildings Department 2023, Code of Practice for Structural Use of Steel 2011 (2023 Edition), the Government of the Hong Kong Special Administrative Region.