City University of Hong Kong
Course Syllabus

offered by Department of Architecture and Civil Engineering
with effect from Semester A 2022/23

Part I Course Overview

Course Title:	Applied Fire and Plumbing Engineering
Course Code:	CA6607
Course Duration:	1 Semester (Some courses offered in Summer Term may start a few weeks earlier than the normal University schedule. Please check the teaching schedules with CLs before registering for the courses.)
Credit Units:	3
Level:	P6
Medium of Instruction:	English
Medium of Assessment:	English
Prerequisites: *(Course Code and Title)*	Nil
Precursors: *(Course Code and Title)*	Nil
Equivalent Courses: *(Course Code and Title)*	BC6607 Advanced Fire and Plumbing Engineering
Exclusive Courses: *(Course Code and Title)*	Nil

Part II Course Details

1. Abstract

To understand the importance of fire protection and fire fighting in modern buildings. To study the statutory requirements relating to fire protection and fire fighting in Hong Kong and China Mainland with the emphasis on both active means and passive means.

2. Course Intended Learning Outcomes (CILOs)

(CILOs state what the student is expected to be able to do at the end of the course according to a given standard of performance.)

No.	CILOs	Weighting (if applicable)	Discovery-enriched curriculum related learning outcomes (please tick where appropriate)		
			A1	*A2*	*A3*
1.	understand the approach of performance-based fire safety engineering study;		✓		
2.	create strategy for conducting a deterministic fire safety engineering approach;			✓	
3.	calculate different flow conditions in plumbing system;		✓	✓	
4.	apply the current and new technologies of plumbing engineering			✓	
		100%			

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 self-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.

3. Teaching and Learning Activities (TLAs)
(TLAs designed to facilitate students' achievement of the CILOs.)

TLA	Brief Description	CILO No.				Hours / week (if applicable)
		1	2	3	4	
Lectures	Explain and practice the principles and applications of the fire and plumbing engineering	✓		✓	✓	
Tutorials	Develop application approaches on fire and plumbing engineering problems		✓		✓	

Semester Hours:	3 hours per week
Lecture/Tutorial/Laboratory Mix:	Lecture (2); Tutorial (1); Laboratory (0)

4. Assessment Tasks/Activities
(ATs are designed to assess how well the students achieve the CILOs.)

Assessment Tasks / Activities	CILO No.				Weighting	Remarks
	1	2	3	4		
Continuous Assessment: 50%						
Mid-term Test			✓	✓	20%	
Project		✓			30%	
Examination: 50% (duration: 2 hour(s))						
Examination					50%	
					100%	

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%

5. Assessment Rubrics

(Grading of student achievements is based on student performance in assessment tasks/activities with the following rubrics.)

Applicable to students admitted in Semester A 2022/23 and thereafter

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B)	Marginal (B-, C+, C)	Failure (F)
Mid-term Test	ABILITY to explain the principles and practices in plumbing engineering	High	Significant	Basic	Not even reaching marginal levels
Project	ABILITY to develop application approaches for solving fire engineering problems	High	Significant	Basic	Not even reaching marginal levels
Examination	ABILITY to describe and apply the principles of the fire and plumbing engineering	High	Significant	Basic	Not even reaching marginal levels

Applicable to students admitted before Semester A 2022/23

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
Mid-term Test	ABILITY to explain the principles and practices in plumbing engineering	High	Significant	Moderate	Basic	Not even reaching marginal levels
Project	ABILITY to develop application approaches for solving fire engineering problems	High	Significant	Moderate	Basic	Not even reaching marginal levels
Examination	ABILITY to describe and apply the principles of the fire and plumbing engineering	High	Significant	Moderate	Basic	Not even reaching marginal levels

Part III Other Information (more details can be provided separately in the teaching plan)

1. Keyword Syllabus
(An indication of the key topics of the course.)

Review of fire science, modelling fire growth and development; zone and field models, appraisal of fire engineering systems; prescriptive and performance based fire codes; fire escape; cold and hot water supply; sanitation and drainage, basic hydraulics, plumbing and drainage system design, components of plumbing and drainage systems, new plumbing technologies.

2. Reading List

2.1 Compulsory Readings
(Compulsory readings can include books, book chapters, or journal/magazine articles. There are also collections of e-books, e-journals available from the CityU Library.)

1.	Nil

2.2 Additional Readings
(Additional references for students to learn to expand their knowledge about the subject.)

1.	CIBSE (2003) Fire engineering, 2nd ed., London.
2.	Barham R. (1996) Fire engineering and emergency planning, E & FN Spon, London.
3.	Fire Prevention Council (1998) Fire spread in curtain walled buildings [videorecording], Borehamwood, England.
4.	Bryan J.L. (1993) Fire suppression and detection systems, 3rd ed., Macmillan, New York.
5.	CIPHE (2002) Plumbing Engineering Services Design Guide, Hornchurch, Essex, UK.
6.	Swaffield, J.A. and Galowin, L.S. (1992) The Engineered design of building drainage systems, Ashgate, Hants, England.
7.	http://www.cibse.org
8.	http://www.ashrae.org
9.	http://www.nist.gov
10.	http://www.iphe.org.uk