

City University of Hong Kong

Information on a Course offered by Division of Building Science and Technology with effect from Semester A in 2012 / 2013

Part I

Course Title:	Piped Services	
Course Code:	BST22541	
Course Duration:	1 Semester	
Credit Units:	3	
Level:	A2	
Medium of Instruction:	English	
Prerequisites:	Nil	
Precursors:	BST12512	Technological Science 2
Equivalent Courses:	BST21541	Piped Services
Exclusive Courses:	Nil	

Part II

1. Course Aims

This course aims to

1. provide students with fundamental knowledge of system components, working principles, and erection considerations of water supply services, sanitation and drainage systems;
2. enable students to recognize energy saving principles in water supply services, and drainage systems.

2. Course Intended Learning Outcomes (CILOs)

Upon successful completion of this course, students should be able to:

No.	CILOs	Weighting*
1.	apply basic principles, pipe sizing calculations, relevant standards and legislative requirements to the design and installation of cold water supply systems with due consideration to energy and saving.	3
2.	apply basic principles, pipe sizing calculations, relevant standards and legislative requirements to the design and installation of hot water supply systems with due consideration to energy and saving.	3
3.	apply basic principles, pipe sizing calculations, relevant standards and legislative requirements to the design and installation of flushing water supply systems with due consideration to energy and saving.	3
4.	apply basic principles, pipe sizing calculations, relevant standards and legislative requirements to the design and installation of above ground drainage systems.	3
5.	apply basic principles, pipe sizing calculations, relevant standards and legislative requirements to the design and installation of underground drainage systems with due consideration to energy and saving.	3

*Weightings are assigned to the CILOs according to their **relative importance** to the course (3 = most important).

3. Teaching and Learning Activities (TLAs)

(Indicative of likely activities and tasks designed to facilitate students' achievement of the CILOs. Final details will be provided to students in their first week of attendance in this course)

Teaching pattern: 3 hours per week

Students are required to download notes, tutorial materials and supportive reading notes from the Blackboard. They should also read the recommended text books, search further references, government regulations and codes for the relevant teaching and learning sessions. Group assignments are used for students to practice on their learning and test is used to assess students' performance.

1. Scheduled notes are prepared for students to build up and read before classes.
2. Field trip and observation report and sharing sessions enable students to reveal, apply and compare systems in understanding and applying energy saving consideration.
3. The set up assist in-depth learning and progression to advance stage with self-motivated discovery in planned subjects in the scheduled course activities

	Lecture	Field trip & observation report	Assignment *	Test	Contact Hours
CILO 1	●	●	●	●	8
CILO 2	●	●	●	●	8
CILO 3	●	●	●	●	8
CILO 4	●	●	●		8
CILO 5	●		●		7
					39

*this will not contribute to contact hour

4. Assessment Tasks/Activities

(Indicative of likely activities and tasks designed to assess how well the students achieve the CILOs. Final details will be provided to students in their first week of attendance in this course)

Coursework: 40%

Examination: 60%

Duration of examination: 2.5 hours

Note: A student must obtain a minimum mark of 35 in both coursework and examination and an overall mark of 40 to pass the course.

1. An **Assignment** is a study and investigation report containing observations, findings, comparison, application and reflection of learning regarding to a detailed study of the relevant CILO and subject related.
2. The **field trip and observation report** is for self-reflection and demonstration for students' ability in modernizing after learning a subject area.
3. A **Test** is set in the form of short and calculation questions.
4. An **Examination** consists of long questions and case/calculation problems.

	Field trip & observation report	Assignment*	Test	Examination	Weighting
CILO 1	●	●	●	12	3
CILO 2	●	●	●	12	3
CILO 3	●	●	●	12	3
CILO 4		●		12	3
CILO 5		●		12	3
Assessment Percentage	10	15	15	60	

*Weightings are assigned to the CILOs according to their relative importance to the course (3 = most important).

5. Grading of Student Achievement

Student achievement will be graded according to their performance in assessment tasks/activities. Details are as follows:

Grade	Description of Achievement	Remarks
A+	Outstanding performance reflecting by excellent assignment and log reports submission, shown deep understanding in Test and Examination, plus active participation in Tutorial sessions	
A, A-, B+	Good performance in assignment and log reports submission, shown above average understanding in Examination, moderate participation in Tutorial session	Unsatisfactory assignment or log reports submission
B, B-	Medium performance in assignment and log reports submission, shown average understanding in Examination, passive participation in Tutorial session	
C+, C	Average performance in assignment and log reports submission, shown general understanding in Examination, passive participation in Tutorial session	May fail in Test or average assignment marks
C-, D	Below average performance in assignment and log reports submission, shown below average understanding in Examination, less participation in Tutorial session	May fail in Test or poor assignment marks
F	Cannot demonstrate the learnt theory and applications in either assignment or log reports cannot master the theory and answer the test or examination straight and precisely according to the main principles.	

Part III

Keyword Syllabus

1. Sanitary appliances: understanding the types, and application.
2. Cold and flushing water supply systems: basic system configuration, components, details and calculation.
3. Hot water supply systems: basic system configuration, components, details and calculation.
4. Pumps: fundamental and their applications.
5. Above ground drainage system: pipework systems, trap, pipe materials and accessories, sizing and calculation.
6. Rainwater system: basic concept and calculation.
7. Underground drainage systems: system types, components; details, basement system and sewage lifting fundamental.

Recommended Reading

1. Treloar, R. D. (2003). *A Plumbing Encyclopaedia*. 3rd ed. Wiley-Blackwell.
2. Payne, R. (1984). *Drainage and Sanitation*. UK: Longman Group United Kingdom.
3. Blower G. J. (2006). *Plumbing: Mechanical Services: Book One*. 5th ed. Prentice Hall.
4. Wise, A. F. E. and Swaffield J. A. (2002). *Water Sanitary and Waste Service for Buildings*. 5th ed. Butterworth-Heinemann.
5. Hall, F. (1987). *Plumbing Technology*. 2nd Rev Ed. Longman.
6. CIBSE guide C, E and G.
7. The institute of Plumbing – Plumbing Engineering Design Guide 1998 and 2002 versions