City University of Hong Kong
Course Syllabus

offered Division of Building Science & Technology
with effect from Semester B 2020/21

Part I   Course Overview

Course Title: **An Introduction to Infrastructures in Hong Kong**

Course Code: **GE1312**

Course Duration: **1 Semester**

Credit Units: **3**

Level: **A1, B1**

Proposed Area:
(for GE courses only)
☐ Arts and Humanities
☐ Study of Societies, Social and Business Organisations
☒ Science and Technology

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)   **Nil**

Exclusive Courses:
(Course Code and Title)   **Nil**

Part II   Course Details

1.   Abstract
(A 150-word description about the course)

Recent infrastructure projects like the Central Reclamation (中環填海), the Guangzhou-Shenzhen-Hong Kong Express Rail Link (廣深港高速鐵路) and the extension of Tseung Kwan O Landfill site (將軍澳堆填區) clearly reveal the growing public concern about the significant impact of infrastructure development on our society and environment. In view of such growing public concerns, the major objective of this course is to arouse students' interest to inquire into, through a series of local cases studies, the science and technology involved in infrastructure development and its associated impacts on our local community as well as the society at large, thus educating our students so that they can participate as responsible members in a contemporary society.

Throughout the course, lectures and documentary videos are used to introduce a simple yet clear picture of the engineering works involved in some of the completed and on-going major infrastructure developments in Hong Kong. An individual project is assigned to each student that requires them to discuss and review various issues, due to infrastructure developments, from different perspectives. Students are required to arrange site visits to infrastructure projects and operational facilities so that they can experience the actual construction operation and its impacts on the environment. Group presentations in the form of role play will also be used to engage students to appraise the impact of infrastructure development from different angles.

The course is suitable for students who are interested in knowing more about the infrastructure development around us.

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 contemporary infrastructure development in Hong Kong.	25%	√		
2.	Appreciate infrastructure development in Hong Kong from scientific and engineering perspectives through case studies.	30%	√		
3.	Appraise the value of infrastructure development from social, economical and environmental perspectives.	20%		√	
4.	Evaluate rationally on Government's infrastructure development plans and projects from policy-makers', engineering professionals', local community's and society's point of views.	25%		√	
	* If weighting is assigned to CILOs, they should add up to 100%.	100%			

 # Please specify the alignment of CILOs to the Gateway Education Programme Intended Learning outcomes (PILOs) in Section A of Annex.

    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	This is a whole-class activity consists of oral and multimedia presentation of local case studies which provide students an overall conceptual picture of the relevant key elements of the infrastructure and the impacts from different points of view.	√	√			3 hours/week
Site Visits / Field trips	They are required to visit an on-going project or an operational facility to gain further insights into the latest infrastructure development in Hong Kong. It also provides an opportunity for students to discuss directly with professionals from various concerned parties or government officials.	√	√	√		3 hours
Group Project and Role play	Group presentation in the form of role play will be used to assess students' ability to understand an infrastructure development project/plan from different perspectives like policy makers, local residents in the community involved, engineering professionals, and the society at large etc. An individual report shall be submitted after the presentation.				√	3 hours

4. Assessment Tasks/Activities (ATs)

(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%							
Group project: role play				√		25%	
In-class assignments	√	√	√			25%	
Examination: 50% (duration: 2 hours , if applicable)							
* The weightings should add up to 100%.						100%	

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.

5. Assessment Rubrics

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

Assessment Task	Criterion	Excellent (A+, A, A-)	Good (B+, B, B-)	Fair (C+, C, C-)	Marginal (D)	Failure (F)
1.Role play	Ability to discover, as demonstrated by students' critical thinking skills to assess ideas, acquiring research skills, synthesizing knowledge across disciplines to real-life problems.	High	Significant	Moderate	Basic	Not even reaching marginal levels
2. In-class assignment	Ability to discuss and elaborate on what they learn during the lectures	Presents an outstanding appreciation of relevant theories, and covers most key points and issues. Excellently-structured, written answers and solutions with in-depth and very clear application of lecture materials and readings.	Presents a very good to fairly good appreciation of relevant theories, and covers most key points and issues. Well structured, written answers and solutions with good and clear application of lecture and learned materials and readings with relevant illustration materials and arguments.	Has fair to little, relevant and accurate solutions and illustrations, and covers a fair and sufficient number of issues and main points but some are not relevant or accurate. Demonstration of a fair degree of application of lecture and learned materials with relevant illustration materials and arguments.	Has little relevant and accurate solutions and illustrations, and covers a barely sufficient number of issues and main points but many are not relevant or accurate. Demonstration of a barely sufficient degree of application of lecture and learned materials with relevant illustration materials and arguments.	Substantial lack of understanding in meeting course objectives. Not able to present in a structured and clear manner. Not able to cover a few number of main points or key information, or relevant research analysis.
4. Examination	Various scopes of knowledge, concepts, principles and application	High degree of Demonstration	Very good to fairly good degree of Demonstration	Fair degree of Demonstration	Basic/low degree of Demonstration	No or less than basic demonstration

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.)
   Wall-liked Building: Impact on Outdoor Living Environment (屏風樓 冇 "風流")
   Indoor Living Environment of Modern Green Buildings (廿五.五度是我最喜愛的溫度?)
   Highway Development: Social and Environmental Impacts (路政與民生)
   Reclamation in Victoria Harbour (維港 變 "維巷")
   Sewerage Discharge to Victoria Harbour (暢泳在維港 ?)
   Solid Waste Collection & Treatment (垃圾…….何去何從？)
   Flooding Problems and Solutions (水能載舟亦能覆舟)

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.)

   N.A.

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

1.	環保觸覺 [編著]，"圍港: 從屏風樓看香港的城市規劃"，Warrior Books, 2009, (Chapters 3 and 5 pp. 67-90 and 107-124)
2.	Santamouris M et al, Energy and climate in the urban built environment, James & James, London 2001. (Chapter 5, "Heat Island Effect", pp. 48-68)
3.	Highways Department of Hong Kong SAR Government, "Hong Kong - Zhuhai-Macao Bridge & Related Projects". http://www.hyd.gov.hk/eng/major/hzmb/index.htm
4.	Highways Department of Hong Kong SAR Government, "Central - Wan Chai Bypass and Island Eastern Corridor Link". http://www.hyd.gov.hk/eng/major/road/projects/6579th/index.htm
5.	Drainage Service Department of Hong Kong SAR Government, "Movie on Flood Prevention". http://www.dsd.gov.hk/EN/Flood_Prevention/How_to_Reduce_Flood_Damage/Movies_on_Flood_Prevention/index.html
6.	Drainage Service Department of Hong Kong SAR Government, "Movie on Sewerage". http://www.dsd.gov.hk/EN/Sewerage/Sewerage_Strategy/Movie_on_Sewerage/index.html
7.	Environmental Protection Department of Hong Kong SAR Government, "Strategy Landfills". http://www.epd.gov.hk/epd/english/environmentinhk/waste/prob_solutions/msw_strategic.html
8.	Development Bureau of Hong Kong SAR Government, "Initiatives under Developing the Infrastructure for Economic Growth". http://www.devb.gov.hk/en/about_us/policy/policy_agenda_1011/initiatives_under_developing/index.html

A. Please specify the Gateway Education Programme Intended Learning Outcomes (PILOs) that the course is aligned to and relate them to the CILOs stated in Part II, Section 2 of this form:

GE PILO	**Please indicate which CILO(s) is/are related to this PILO, if any** *(can be more than one CILOs in each PILO)*
PILO 1: Demonstrate the capacity for self-directed learning	CILO 3-4: Students are required to write a project report on an assigned topic and prepare a presentation in a team for role playing. All the assigned tasks will require students to find out information by themselves through reading, searching for information on the Internet and analysis of information before coming to a conclusion.
PILO 2: Explain the basic methodologies and techniques of inquiry of the arts and humanities, social sciences, business, and science and technology	CILO 4. Students shall select an infrastructure development plan for which they need to engage themselves in an exploration process: they need to raise questions, use questions that lead them to activities, make connections among ideas and propose explanations and solutions. Through this inquiry-based learning, students develop a basic understanding of the methodologies and techniques of inquiry.
PILO 3: Demonstrate critical thinking skills	CILO 3, 4: Project report requires students critically evaluate infrastructure projects from different angles in rationalised bases. Critical thinking skills are also an important aspect in assessing student performance.
PILO 4: Interpret information and numerical data	CILO 2, 3, 4: Arguments and critics in reports, role play and presentation are required to be backed by reliable statistics and appropriate calculation, e.g. urban heat island effect should be based on appropriate data; disturbance to public should be based on noise measurement; argument for alternative approach to a project should be based on short and long-term cost evaluation, etc.
PILO 5: Produce structured, well-organised and fluent text	
PILO 6: Demonstrate effective oral communication skills	CILO 4: Effective oral communication skills will be judged in role play.
PILO 7: Demonstrate an ability to work effectively in a team	
PILO 8: Recognise important characteristics of their own culture(s) and at least one other culture, and their impact on global issues	
PILO 9: Value ethical and socially responsible actions	
PILO 10: Demonstrate the attitude and/or ability to accomplish discovery and/or innovation	CILO 4. Students shall select an infrastructure development plan for which they need to engage themselves in an exploration process: they need to raise questions, use questions that lead them to activities, make connections among ideas and propose explanations and solutions. Through this inquiry-based learning, students develop an ability to accomplish discovery by creating solutions to real-life problems.

GE course leaders should cover the mandatory PILOs for the GE area (Area 1: Arts and Humanities; Area 2: Study of Societies, Social and Business Organisations; Area 3: Science and Technology) for which they have classified their course; for quality assurance purposes, they are advised to carefully consider if it is beneficial to claim any coverage of additional PILOs. General advice would be to restrict PILOs to only the essential ones. (Please refer to the curricular mapping of GE programme: http://www.cityu.edu.hk/edge/ge/faculty/curricular_mapping.htm.)

B. Please select an assessment task for collecting evidence of student achievement for quality assurance purposes. Please retain at least one sample of student achievement across a period of three years.

Selected Assessment Task
Site visit report and group project presentation.