SBS4113 Architecture & Buildings

http://ibse.hk/ SE4113/

1 September 2016

Introduction of the module &

Lecture : What are buildings for ?

Teachers:

Ir. Prof. K P Cheung- Associate Professor, Architecture, HKU

Ir. Dr. Sam C M Hui, FST, THEi

Sr. Ir. Dr Dennis Wu, FST, THEi

Cheung's Old web site: http://www.ad.arch.hku.hk/~kpcheung/index.html

Web site jointly developed with *Dr Hui : http://www.ad.arch.hku.hk/research/BEER/

[*Dr Hui 's web site on Building Services Engineering : http://www.ibse.hk/]

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Module Aim(s)

The module aims to encourage and inspire students to understand the important roles and functions of buildings together with their functional and environmental performance requirements. It also provides students an overview of the processes involved in building design, construction and commissioning. It also introduces the basic knowledge of building technology, building materials, and major building elements that have significant impacts on building and services design and operation.

Assessment and Marks

The percentage contributions of the different assessment items to the overall module assessment are:

- Assignment 1 : 20%
- Assignment 2 : 20%
- Project : 30%
- Examination : 30%

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Module Learning Outcomes

On completion of this module, students are expected to be able to:

1. understand the basic forms, functions and major constituent elements for buildings;

2. understand the basic properties of major building materials;

3. understand the basic characteristics of building and building services systems;

4. understand the basic environmental performance requirements of buildings through interactions of human and buildings;

5. appraise the typical design, construction and commissioning processes of high-rise buildings; and

6. communicate design ideas effectively in writing, verbally and graphically with various parties

SBS4113 Architecture & Buildings – Module Content

1. Architecture
   - Building forms, functions, major constituent elements, and its cultural, political, economic influences

2. Human-Building interactions
   - physical and physiological responses. Human sensation and stimulus. Subjective sensory perception. Visual sense and the eye. Sense of smell. Aural sense and the ear. Skin senses of heat and cold. Human perception of the thermal and acoustic environment. Response to perception of built environment

3. Building environmental performance
   - role of building as an environmental modifier, passive environmental controls, solar angle and sun paths, solar irradiance, daylighting, room acoustics and sound transmission, psychrometry, natural ventilation

4. Building materials
   - basic properties including mechanical, thermal, and fire resistance properties of constituent building materials.

5. Building technology and processes
   - technology for high-rise commercial and residential developments. Building structural systems, enclosure systems, interior sub-division system, access ceiling and flooring system, and building services systems. Integration/interaction of building elements with the building services installations. Building design, construction, commissioning and operation processes

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Teaching Schedule

Ref.	Date	Topics	Lecturer(s)
A01	01-Sep-2016 (Thur)	Introduction: The course content; Lecture : what are buildings for?	Ir. Dr. Sam C M Hui
A02	08-Sep-2016 (Thur)	Lecture : Components and systems of buildings	Prof. K. P. Cheung
A03	15-Sep-2016 (Thur)	Lecture : Introduction to building services I	Prof. K. P. Cheung
A04	22-Sep-2016 (Thur)	Lecture : Introduction to building services II	Prof. K. P. Cheung
A05	29-Sep-2016 (Thur)	Lecture : Basics of human-building interaction I : 5 human senses	Prof. K. P. Cheung
A06	06-Oct-2016 (Thur)	Lecture : Environmental building design concepts - ECEP series of web lectures * selected parts of http://dnr.louisiana.gov/assets/TAD/education/ECEP/ecep.htm	Prof. K. P. Cheung
A07	13-Oct-2016 (Thur)	Case study: THEi building; Issuance of Assignment 1 [Group assignment] -20% :Technology Appreciation of THEi Building	Prof. Cheung/ Dr. Wu
A08	20-Oct-2016 (Thur)	Presentation of Group assignment 1	Prof. Cheung/ Dr. Wu/Dr Hui

SBS4113 Architecture & Buildings - *Teaching Schedule continued*

A09	27-Oct-2016 (Thur)	Lecture : Case studies : Types of Buildings in HKU & Issuance of Group assignment 2 [20%] : Appreciation of layout and environmental design of buildings of HKU Mani Campus Building	Prof. K. P. Cheung
A10	03-Nov-2016 (Thur)	Site Visit to Buildings in HKU, a process on attempting Group Assignment 2	Prof. Cheung/ Dr. Wu
A11	10-Nov-2016 (Thur)	Seminar :Your home : home sustainable issues, ventilation, fire, clothes drying, including open kitchen issues ; & Issuance of Individual Project on building technology study of your home and its vicinity [30%]	Prof. Cheung/ Dr. Wu Prof. Cheung/ Dr. Wu
A12	17-Nov-2016 (Thur)	Lecture : Case studies on residential buildings	Prof. Cheung/ Dr. Wu
A13	24-Nov-2016 (Thur)	Seminar : Selected topics on energy saving and sustainable design, operation and maintenance in residential buildings	Prof. Cheung/ Dr. Wu
A14	01-Dec-2016 (Thur)	Revision, Dialogue on reviewing the module between teachers and students	Prof. Cheung/ Dr. Wu
	08-13 Dec 2016	[Revision week] (no lecture)-hand-in of individual project [30%]	---