

## Subject Description Form

Subject Code	<b>BSE1571</b>
Subject Title	<b>Architecture and Built Environment</b>
Credit Value	3
Level	1
Pre-requisite Co-requisite Exclusion	Nil Nil Nil
Objectives	<p>The emphasis of this subject is to encourage and inspire students to understand the important roles and functions of buildings together with their functional and environmental performance requirements.</p> <p>The main objectives are to:</p> <ol style="list-style-type: none"> <li>1. enable students to understand the basic roles and performance requirements of buildings;</li> <li>2. provide an overview of the processes involved in building design, construction and commissioning; and</li> <li>3. equip students with basic knowledge of building planning process, building materials, and major building elements that have significant impacts on building and services design and operation.</li> </ol>
Intended Learning Outcomes	<p>Upon completion of the subject, students are able to:</p> <ol style="list-style-type: none"> <li>a) understand the basic forms, functions and major constituent elements for buildings;</li> <li>b) consider the basic properties of major building materials;</li> <li>c) consider the basic characteristics of building and building services systems;</li> <li>d) assess the basic environmental performance of buildings;</li> <li>e) provide an account of typical design, construction and commissioning processes of high-rise buildings; and</li> <li>f) communicate design ideas in writing, verbally and graphically through group and individual assignments.</li> </ol>
Subject Synopsis/ Indicative Syllabus	<p>The subject will examine the basic functions of buildings, key performance of building materials, design, construction and commissioning processes, performance requirements in terms of human comfort, health and safety.</p> <p><b>Architecture:</b> Building forms, functions, major constituent elements, and its cultural, political, economic influences.</p> <p><b>Human-Building interactions:</b> 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.</p> <p><b>Building environmental performance:</b> 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.</p> <p><b>Building materials:</b> basic properties including mechanical, thermal, and fire resistance properties of constituent building materials.</p> <p><b>Building processes:</b> Planning 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.</p>

Teaching/Learning Methodology	<p>Lectures will be used to introduce necessary background information for each of the main topics. The majority of lectures have an associated in-class activity that will explore the introduced concepts in more detail, for example by studying specific legislative instruments or building assessment schemes in further detail and then applying them to specific case studies.</p> <p>Tutorials will provide the opportunity for questions and discussions on any problems related to lectures.</p> <p>Site visit will be introduced so that students can view actual examples of different architectural features, construction methods, green buildings, particular design features etc.</p> <p>Guided on-line reading and study activities will also be set.</p>																																																																																							
Assessment Methods in Alignment with Intended Learning Outcomes	<p>The subject will be continuously assessed. Variety of assessment methods are adopted to assess the key outcomes, including:</p> <ol style="list-style-type: none"> <li>1. Assignment(s): to assess students' understanding of the basic forms, functions and major constituent elements of materials use, features, environmental performance, and able to communicate their ideas and understandings in written form.</li> <li>2. A student-centered seminar report and presentation that assesses students' understanding on the engineering systems of buildings and able to communicate their ideas and understandings verbally; and</li> <li>3. Test(s) that assesses students' understanding, interpretation, considerations and communications of all aspects related to Architecture and Buildings.</li> </ol> <table border="1" data-bbox="405 853 1485 1328"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="6">Intended subject learning outcomes to be assessed (Please tick as appropriate)</th> </tr> <tr> <th>a</th> <th>b</th> <th>c</th> <th>d</th> <th>e</th> <th>f</th> </tr> </thead> <tbody> <tr> <td>Assignment 1</td> <td>20</td> <td>✓</td> <td>✓</td> <td></td> <td></td> <td></td> <td>✓</td> </tr> <tr> <td>Assignment 2</td> <td>20</td> <td>✓</td> <td></td> <td></td> <td>✓</td> <td></td> <td>✓</td> </tr> <tr> <td>Seminar project</td> <td>30</td> <td>✓</td> <td></td> <td>✓</td> <td></td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Test</td> <td>30</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>Total</td> <td>100%</td> <td colspan="6"></td> </tr> </tbody> </table>								Specific assessment methods/tasks	% weighting	Intended subject learning outcomes to be assessed (Please tick as appropriate)						a	b	c	d	e	f	Assignment 1	20	✓	✓				✓	Assignment 2	20	✓			✓		✓	Seminar project	30	✓		✓		✓	✓	Test	30	✓	✓	✓	✓	✓	✓	Total	100%																																
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Reading List and References	<p>Allen, Edward ; Iano, Joseph, 2014. Fundamentals of building construction: materials and methods, 6<sup>th</sup> Ed. New York: Wiley.</p> <p>Grondzik, Walter T.; Alison G. Kwok, 2019. Mechanical and electrical equipment for buildings, 13<sup>th</sup> Ed. Hoboken, New Jersey : Wiley.</p>																																																																																							

	<p>Xue, Charlie Q. L., 2016. Hong Kong Architecture 1945-2015: From Colonial to Global, Singapore: Springer Singapore Pte. Limited.</p> <p>Building Hong Kong: Environmental Considerations, W.S. Wong and E.H.W. Chan (Eds.), Hong Kong University Press. 2000. [NA2542.35 .B855 2000]</p>
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