

## Subject Description Form

<b>Subject Code</b>	LSGI4222
<b>Subject Title</b>	<b>Building Information Modelling (BIM) Management</b>
<b>Credit Value</b>	4
<b>Level</b>	4
<b>Pre-requisite/ Co-requisite/ Exclusion</b>	LSGI2296 Computer Aided Drafting and Engineering Drawings AND (LSGI3220 Building Information Modelling & 3D GIS OR LSGI3652A Utility Systems and Design OR LSGI3613 Construction and Maintenance of Utility Networks)
<b>Objectives</b>	The aims of this subject are:  1. This subject equips students with the knowledge and skills to be a BIM managerial role in land surveying and construction projects. 2. This subject is commensurate with core subjects of the CIC Accreditation of Building Information Modelling (BIM) Manager Courses which are based on the skills as BIM modeller acquired in the prerequisite subjects.
<b>Intended Learning Outcomes</b>	Upon completion of the subject, students will be able to: a) describe BIM concept definitions and scope, BIM standards and guidelines in the Hong Kong and global contexts; b) explain BIM software, the modelling process, and current and upcoming technologies; c) understand BIM uses and BIM software applications, design and manage the overall process of a BIM project; d) plan and execute the setting-up of a common data environment and data quality control system for effective use and sharing of digital information in a BIM project; and e) describe commercial and financial issues of BIM as well as BIM-related contractual issues.
<b>Subject Synopsis/ Indicative Syllabus</b>	<u><i>BIM initiation:</i></u>  <ul style="list-style-type: none"> <li>• BIM Concept</li> <li>• Local &amp; Global Context, BIM standards and guideline</li> </ul> <u><i>BIM Software and Technologies</i></u>  <ul style="list-style-type: none"> <li>• BIM Software</li> <li>• Technologies</li> </ul>

	<p><u><i>BIM Uses and Processes</i></u></p> <ul style="list-style-type: none"> <li>• Client BIM Strategic Stage</li> <li>• Client Pre-tender Project Stage</li> <li>• Definition &amp; Design Stage</li> <li>• Construction Stage</li> <li>• Handover Stage</li> <li>• Operation &amp; Maintenance Stage</li> </ul> <p><u><i>Digital Information Management, Collaboration and Integration</i></u></p> <ul style="list-style-type: none"> <li>• Digital Information Management</li> <li>• Common Data Environment (CDE)</li> <li>• Data Quality Control &amp; Assurance across various stages</li> </ul> <p><u><i>Commercial and Contract</i></u></p> <ul style="list-style-type: none"> <li>• Commercial Issue</li> <li>• Contract Issue</li> </ul> <p><i>Remarks: The module syllabus of “LSGI4XXX BIM management” is fully in line with the required Core Subjects of the CIC Accreditation of Building Information Modelling (BIM) Manager Courses</i></p>
<p><b>Teaching/ Learning Methodology</b></p>	<p>Mini-lectures – Lectures and demonstrations are used to introduce and explain key concept, definition and application. Multi-media illustrations are used for students to appreciate the good practices.</p> <p>Hands-on workshops - Group discussion or hands-on activities are arranged to solidify and practice the knowledge and skills students have learnt in the class.</p> <p>Site visit – Four 3.5 hour site visits will be arranged to project clients, consultants, contractors and BIM specialists for students to appreciate the industrial practice.</p> <p>Assignments and class project – Individual and group assignments are provided for students to reflect and apply their knowledge gained from the class.</p> <p>Self-learning - Independent on-line learning materials are provided for students to broaden their knowledge of BIM technology and applications.</p>

<b>Assessment Methods in Alignment with Intended Learning Outcomes</b>	<table border="1"> <thead> <tr> <th rowspan="2">Specific assessment methods/tasks</th> <th rowspan="2">% weighting</th> <th colspan="5">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> </tr> </thead> <tbody> <tr> <td>1. Assignments and class project</td> <td>40%</td> <td></td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td>2. Final test</td> <td>60%</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> <td>✓</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td><b>Total</b></td> <td><b>100 %</b></td> <td colspan="5"></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	1. Assignments and class project	40%		✓	✓	✓	✓	2. Final test	60%	✓	✓	✓	✓	✓								<b>Total</b>	<b>100 %</b>					
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<p>Understanding of concepts and knowledge of BIM management will be assessed by two assignments and a class project covering intended learning outcome ‘b’ to ‘e’, and by a final test covering all intended learning outcomes. Assignments and class project include in-class group discussion, presentation and individual writing assignment. The intended learning outcomes are covered in the six elements in the subject synopsis: BIM initiation, Software and Technologies, Uses and Processes, Digital Information Management, Collaboration and Integration, Commercial and Contract. For the individual writing assignment, students are required to make close link between the general principles of BIM and a proposed case-specific scenario to encourage critical thinking and avoid excessive reliance on Generative AI.</p>																																													
<b>Student Study Effort Expected</b>	Class contact:																																												
	<ul style="list-style-type: none"> <li>▪ Mini lecture and live demonstration</li> </ul>					26Hrs.																																							
	<ul style="list-style-type: none"> <li>▪ Workshops</li> </ul>					13Hrs.																																							
	<ul style="list-style-type: none"> <li>▪ Site visits</li> </ul>					14Hrs.																																							
	Other student study effort:																																												
	<ul style="list-style-type: none"> <li>▪ Assignments/Self Study</li> </ul>					58Hrs.																																							
	<ul style="list-style-type: none"> <li>▪ Preparation and class project</li> </ul>					30Hrs.																																							
	Total student study effort					141Hrs.																																							
<b>Reading List and References</b>	<b>Essential Textbooks/Reading Materials:</b> <ul style="list-style-type: none"> <li>• <i>The BIM Manager's Handbook: Guidance for Professionals in Architecture, Engineering, and Construction</i>, Holzer Dominik, New York: John Wiley &amp; Sons, Incorporated 2016, ISBN: 9781118982310</li> </ul>																																												

- *Adoption of Building Information Modelling for Capital Works Projects in Hong Kong*, DEVB Technical Circular (Works) No. 12/2020, Ref: DEVB(W) 430/80/01, 23 Dec 2020, <https://www.devb.gov.hk/filemanager/technicalcirculars/en/upload/381/1/TCW%2012-2020.pdf>
- CIC BIM Standards series, <https://www.bim.cic.hk/en/resources/publications>

**Reference Reading Materials:**

- ISO 19650 | BSI Hong Kong - BSI Group, <https://www.bsigroup.com/en-HK/>
- *The BIM management handbook*, Shepherd David, Newcastle upon Tyne : RIBA Publishing 2015, ISBN: 9780429347535
- *BIM-Based Collaborative Building Process Management*, Daniotti Bruno; Pavan Alberto; Lupica Spagnolo Sonia; Caffi Vittorio; Pasini Daniela; Mirarchi Claudio, Cham: Springer International Publishing AG 2019, ISBN: 9783030328887
- *BIM and Construction Management: Proven Tools, Methods, and Workflows*, Hardin Brad; McCool Dave, New York: John Wiley & Sons, Incorporated 2015, ISBN: 9781118942765
- *BIM for Facility Managers, IFMA; Teicholz Paul, New York: Wiley 2013, ISBN: 9781118382813*