BSc (Hons) in Building & Real Estate Scheme  
and  
Higher Diploma  
For Student Intake 2005/2006  

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<tr>
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<td>(32105-PMT)</td>
</tr>
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<td>Surveying</td>
<td>(32105-SUR)</td>
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And

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**Subject Portfolio**

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1. GENERAL INFORMATION

Faculty: Construction and Land Use (CLU)
Department: Building & Real Estate (BRE)

Awards: BSc (Hons) Building Real Estate Scheme:
BSc (Hons) in Building Engineering & Management (BEM)
BSc (Hons) in Property Management (PMT)
BSc (Hons) in Surveying (SUR)
Higher Diploma in Building Technology & Management (HDBTM)

Mode of Attendance: Full-time/Sandwich for BSc (Hons) undergraduate programmes
                 Full-time for Higher Diploma programme

Duration: 3 years normally for the full-time undergraduate programmes
          4 years normally for the sandwich undergraduate programmes
          2 years for higher diploma

Total No. of Credits: 90 for the undergraduate programmes plus 2 training credits in Work-Integrated Education (WIE)
                     62 for higher diploma programme plus 3 training credits.

The Department offers the BSc (Hons) Building and Real Estate Scheme, comprising three honours degree awards; and one higher diploma award with specialism in engineering and surveying.

All awards/programmes are validated by the University and accredited by the professional institutions. The undergraduate programmes are:-

- BSc (Hons) in Building Engineering and Management is accredited by the Hong Kong Institution of Engineers (HKIE), Chartered Institute of Building (CIOB) and the Hong Kong Institution of Construction Managers (HKICM);
- the restructure generic surveying programme BSc (Hons) in Surveying is accredited by the Hong Kong Institute of Surveyors (RICS) and the Royal Institute of Chartered Surveyors (RICS); and
- the new programme BSc (Hons) in Property Management is accredited by the Hong Kong Institute of Housing (HKIH).

The honours awards are developed as follows:-

1987 BSc in Building Technology & Management
1988 BSc in Building Surveying
       BSc in Construction Management & Economics
       BSc in Real Estate
1993 Upgrade of the four undergraduate programmes to Bachelor of Science (Honours) programmes:-
       - BSc (Hons) Building Technology & Management
       - BSc (Hons) Building Surveying
• BSc (Hons) Construction Management & Economics
• BSc (Hons) Real Estate

1996-97  Comprehensive review of the four honours undergraduate programmes and subsequent conversion of the three-year structured courses into credit-based programmes.

1997  Operation of the credit-based programmes.

1998  Operation under the credit-based system of the University.

1999  Introduction of BSc (Hons) Building Engineering & Management to replace BSc (Hons) Building Technology & Management.

Revision of the curriculum of higher diploma with specialisms in construction management and property management.

2001  Introduction of Building and Real Estate Scheme with four undergraduate awards:-
• BSc (Hons) in Building Engineering & Management
• BSc (Hons) in Building Surveying
• BSc (Hons) in Construction Economics & Management
• BSc (Hons) in Real Estate

2002  Introduction of Higher Diploma in Building Technology & Management with specialism in:-
• Engineering
• Surveying

Accreditation of Higher Diploma in Building Technology & Management (Engineering Specialism) by the Hong Kong Institution of Engineers and Hong Kong Institution of Construction Managers.

2005  Introduction of the new Building and Real Estate (BRE) Scheme with three undergraduate awards:-
• BSc (Hons) in Building Engineering and Management (revised to 90 credits + 2 WIE)
• BSc (Hons) in Property Management (new programme: 90 credits + 2 WIE)
• BSc (Hons) in Surveying (restructured to 90 credits + 2 WIE)

Introduction of outcome-based curriculum for the undergraduate programmes and higher diploma programmes 2005/06 intake cohort.

Revisions of undergraduate degree programmes to 90 credits.

Introduction of Work Integrated Education (WIE) to all undergraduate degree programmes under the BRE scheme.

Contributing Departments / Centres

Teaching support from other departments and centres of the University as follows:-
2. **STRUCTURE AND CURRICULUM**

2.1 **Structure**

Under the BSc (Hons) Building and Real Estate (BRE) Scheme, three specialized full-time/sandwich honours degree awards are offered as follows:-

- **BEM** BSc(Hons) in Building Engineering and Management
- **PMT** BSc(Hons) in Property Management
- **SUR** BSc(Hons) in Surveying

BSc (Hons) in Building Engineering and Management is revised with no major changes. BSc (Hons) in Surveying is restructured from the three existing programmes which are BSc (Hons) in Building Surveying, BSc (Hons) in Construction Economics and Management and BSc (Hons) in Real Estate, BSc (Hons) in Property Management is a new programme.

Higher Diploma in Building Technology and Management is offered with specialisms in engineering and surveying.

The subjects of the credit-based awards/programmes are offered under the five subject disciplines of the Department. The subject disciplines are Economics, Law, Management, Real Estate and Technology.

Subjects are classified into levels. In an undergraduate award programme, subjects are usually from Levels 2 to 4 with the subject prefix of 2XX, 3XX or 4XX to denote the subject level.

2.2 **Award Credits**

Each subject is allocated with a credit value. In terms of student effort, a student is expected to spend average 40 hours of study to earn a credit.

The graduation requirement for an undergraduate award is the completion of 90 credits including both compulsory and elective subjects as specified in the award programme. A student must complete credits as specified in the programme curriculum and progression pattern all compulsory subjects of Level 2, Level 3 and Level 4 together with the required elective subjects for award. In addition, students of all degree programmes have to fulfill a training requirement of 2 training credits in work integrated education (WIE).

The graduation requirement for the higher diploma is the completion of 62 credits, including both compulsory and elective subjects as specified in the programme plus 3 training credits.
The normal work load of a full time student is 15 credits for a semester. The maximum is 21 credits for a semester.

2.3 Duration

An academic year of the University consists of three semesters: Semester 1, Semester 2 and the Summer term. For Semester 1 & 2, each of which usually consists of 14 weeks and followed by examination period. Between these two semesters, there is a semester break. Summer Semester is of 7-week duration and usually begins in June.

Assessment of a subject will usually be completed at the end of the semester in which it is present.

The normal duration for completion of an honours degree award is 6 semesters (full time) with 2 summer terms and the maximum duration is 12 semesters with 5 summer terms. The normal duration for completion of a sandwich honours degree programme is 8 semesters (full time) with 3 summer terms and hence the maximum duration is 16 semesters with 7 summer terms.

The normal duration of a higher diploma award is 2 years (full time) and the maximum duration is 4 years.

2.4 Progression Patterns

A full-time BRE student is required to register for a programme at the time of admission. The graduation requirement for each programme is stipulated in the respective specified progression pattern and curriculum. Notwithstanding any alterations, which the Department may consider necessary, students are expected to follow the progression pattern and curriculum unless special approval or credit transfer or exemption has been granted. Section 2.4a to 2.4d Progression Patterns contain details of the prescribed progression pattern for each of the undergraduate programme under the BSc (Hons) BRE Scheme and the higher diploma programme.
### Progression Pattern
**BSc (Hons) in Building Engineering & Management**

**Pre-Year 1: AMA114 Remedial Mathematics for non-science Students on entry**

<table>
<thead>
<tr>
<th>Stage 1 (1st semester)</th>
<th>Stage 1 (2nd semester)</th>
<th>Stage 1 (Summer semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMA290</td>
<td>BRE2031</td>
<td>WIE</td>
</tr>
<tr>
<td>BRE212</td>
<td>BRE204</td>
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<td>BRE291</td>
<td>BRE218</td>
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<td>BRE2921</td>
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<td>ELC3401</td>
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<td>GEC</td>
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<td></td>
<td>Engineering Mathematics</td>
<td>Environmental Science</td>
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<td></td>
<td>Construction Materials</td>
<td>Structure I</td>
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<td></td>
<td>Construction Technology I</td>
<td>Integrated Project I</td>
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<tr>
<td></td>
<td>Engineering Surveying</td>
<td>Management for CRE</td>
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<td></td>
<td>Industrial Safety I</td>
<td>English in the Workplace (EIW)</td>
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<td></td>
<td>General Education 1</td>
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</table>

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<thead>
<tr>
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<th>Stage 2 (2nd semester)</th>
<th>Stage 2 (Summer semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRE302</td>
<td>BRE324</td>
<td>BRE3931</td>
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<tr>
<td>BRE345</td>
<td>BRE349</td>
<td>Temporary Work Design</td>
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<td>BRE391</td>
<td>BRE3931</td>
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<tr>
<td>BRE3931</td>
<td>BRE350</td>
<td>Project Management &amp; Procurement</td>
</tr>
<tr>
<td>CSE290</td>
<td>BRE351</td>
<td>Contract Administration</td>
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<tr>
<td>GEC</td>
<td>BRE499</td>
<td>Dissertation</td>
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<td></td>
<td>Engineering Economics</td>
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<td></td>
<td>Building Services I</td>
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<tr>
<td></td>
<td>Temporary Work Design</td>
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</tr>
<tr>
<td></td>
<td>Construction Technology II</td>
<td>Project Management &amp; Procurement</td>
</tr>
<tr>
<td></td>
<td>Temporary Work Design</td>
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<td></td>
<td>Construction Technology II</td>
<td>Contract Administration</td>
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<td>BRE931 Temporary Work Design</td>
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**Stage 3 (1st semester) | Stage 3 (2nd semester) |**
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<td>BRE426</td>
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<td>BRE442 (E)*</td>
<td>BRE416 (E)*</td>
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<td>BSE332 (E)*</td>
<td>BRE326 (E)*</td>
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<td></td>
<td>BRE439 (E)*</td>
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</tbody>
</table>

|                        |                        |                           |
|                        |                        | Engineering Contract Procedure |

(E) Elective

**NOTE:** * BEM students are required to opt TWO elective subjects out of the list offered by the Department and as specified: at least ONE elective from the following engineering elective subjects: BRE326 & BSE332.

**Students who opt for sandwich programme study will have year 3 out to work in professional establishments to gain relevant work experiences. The minimum duration is 36 weeks which equate to 18 training credits. This is counted as work-integrated education (WIE).**
## Progression Pattern Summary
### BSc (Hons) in Property Management

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<td>WIE (Summer Semester of either year 1 or year 2)</td>
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<td>BRE206</td>
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<td>BRE216</td>
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<td>BRE217</td>
<td>BRE337</td>
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<td>GEC</td>
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<td>BRE345</td>
<td>BRE326</td>
<td>BRE348 Integrated Project II: International Study</td>
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<td>BRE336</td>
<td>BRE347</td>
<td>WIE (Summer Semester of either year 1 or year 2)</td>
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<tr>
<td>BRE341</td>
<td>BRE319</td>
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</tr>
<tr>
<td>BRE315</td>
<td>BRE348</td>
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<td>BRE348</td>
<td>BRE342</td>
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<td>BRE499</td>
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<td>BRE438</td>
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<td>BRE415 (E)*</td>
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<td>BRE4291 (E)*</td>
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<td>APSS409 (E)*</td>
<td>BRE418 (E)*</td>
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<td></td>
<td>APSS265 (E)*</td>
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<tr>
<td></td>
<td>APSS406 (E)*</td>
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</tr>
</tbody>
</table>

(E) Elective

**NOTE:** * PM students are required to opt **THREE** elective subjects out of the list of elective subjects offered by the Department.

**Students who opt for sandwich programme study will have year 3 out to work in professional establishments to gain relevant work experiences. The minimum duration is 36 weeks which equate to 18 training credits. This is counted as work-integrated education (WIE).**
### Progression Pattern Summary
**BSc (Hons) in Surveying**

<table>
<thead>
<tr>
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<th>Stage 1 (2nd semester)</th>
<th>Stage 1 (Summer semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRE291: Construction Technology I</td>
<td>BRE2921: Management for CRE</td>
<td>WiE (Summer Semester of either year 1 or year 2)</td>
</tr>
<tr>
<td>BRE206: The Legal Context for Construction &amp; Real Estate (CRE)</td>
<td>BRE2031: Environmental Science</td>
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</tr>
<tr>
<td>BRE216: Economics for CRE</td>
<td>BRE218: Integrated Project I</td>
<td></td>
</tr>
<tr>
<td>BRE217: Planning and Development</td>
<td>BRE337: Property Law</td>
<td></td>
</tr>
<tr>
<td>GEC: General Education 1</td>
<td>ELC3401: English in the Workplace (EIW)</td>
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</tr>
<tr>
<td>IC301: Industrial Safety</td>
<td>GEC: General Education 2</td>
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</tr>
</tbody>
</table>

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<thead>
<tr>
<th>Stage 2 (1st semester)</th>
<th>Stage 2 (2nd semester)</th>
<th>Stage 2 (Summer semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRE391: Construction Technology II</td>
<td>BRE326: Management Technology and Management</td>
<td>BRE346 Integrated Project IIA: International Study</td>
</tr>
<tr>
<td>BRE336: Development Control Law</td>
<td>BRE319: Property Investment &amp; Finance</td>
<td>WIE (Summer Semester of either year 1 or year 2)</td>
</tr>
<tr>
<td>BRE341: Property Management I</td>
<td>BRE350: Project Management &amp; Procurement</td>
<td></td>
</tr>
<tr>
<td>BRE315: Property Valuation</td>
<td>BRE346: Integrated Project IIA</td>
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<td>BRE346: Integrated Project IIA</td>
<td>BRE499: Dissertation</td>
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</tbody>
</table>

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<thead>
<tr>
<th>Stage 3 (1st semester)</th>
<th>Stage 3 (2nd semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>BRE499: Dissertation</td>
<td>BRE499: Dissertation</td>
</tr>
<tr>
<td>BRE441: Professional Studies</td>
<td>BRE441: Professional Studies</td>
</tr>
<tr>
<td>BRE329: Construction Contract Law</td>
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</tr>
</tbody>
</table>

*BS Discipline-Specific Elective Subjects:*

| BRE415: Dispute Resolution | BRE435: Design, Adaptation & Conversion |
| BRE437: Facility Management | BRE349: Building Services I |

*QS Discipline-Specific Elective Subjects:*

| BRE415: Dispute Resolution | BRE439: Engineering Contract Procedure |
| BRE440: Cost and Value Management | BRE442: Forecasting & Competition in the Built Environment |

*GP Discipline-Specific Elective Subjects:*

| BRE4291: Real Estate Marketing | BRE418: Real Estate Development |

**NOTE:** *Surveying students are required to opt ONE Discipline from the 3 surveying disciplines offered Building Surveying (BS), General Practice Surveying (G) and Quantity (QS) by the Department.

**Students who opt for sandwich programme study will have year 3 out to work in professional establishments to gain relevant work experiences. The minimum duration is 36 weeks which equate to 18 training credits. This is counted as work-integrated education (WIE).**
# Progression Pattern Summary

## HD Building Technology and Management (Engineering)

<table>
<thead>
<tr>
<th>Stage 1 (1st semester)</th>
<th>Stage 1 (2nd semester)</th>
<th>Stage 1 (Summer semester)</th>
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</thead>
<tbody>
<tr>
<td>AMA118</td>
<td>Mathematics</td>
<td>BRE203</td>
</tr>
<tr>
<td>BRE206</td>
<td>Legal Context in Constr &amp; Real Estate</td>
<td>BRE221</td>
</tr>
<tr>
<td>BRE210</td>
<td>Information &amp; Data Analysis</td>
<td>BRE294</td>
</tr>
<tr>
<td>BRE222</td>
<td>Workshop Practice &amp; Draughtsmanship</td>
<td>IC302</td>
</tr>
<tr>
<td>BRE294</td>
<td>Construction Technology &amp; Structure</td>
<td>LSGI297</td>
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<table>
<thead>
<tr>
<th>Stage 2 (1st semester)</th>
<th>Stage 2 (2nd semester)</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMA290</td>
<td>Engineering Mathematics</td>
</tr>
<tr>
<td>BRE212</td>
<td>Construction Materials</td>
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Students are required to complete two elective subjects (3-credit each) and one GEC subject 2 credits.

Individual subjects are 3-credit value unless specific in ( ).
### HD Building Technology and Management (Surveying)

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Students are required to complete three elective subjects (3-credit each) and one GEC subject 2 credits.
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C = Compulsory Subject  
E = Elective Subject  
B = Bridging Subject  
T = Training Credits

**NOTE:** Department reserves the right to offer electives which may vary as necessary.
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# Available for single-degree students only.

BS - Building Surveying Discipline
GP - General Practice Discipline
QS - Quantity Surveying Discipline

NOTE: Department reserves the right to offer electives which may vary as necessary.
2.6 Double Degrees

Options of double degrees for the undergraduate degree programmes are as follows:

2.6.1 BSc (Hons) in Property Management and BA (Hons) in Social Policy and Administration.

2.6.2 BSc (Hons) in Surveying and BA (Hons) in Design (Environment & Interior).

Details of the double degree programmes subject to the endorsement of Academic Secretariat will be available in mid October, 2005.

3. Programme Outcomes

3.1 Programme Aims of BSc (Hons) in Building Engineering & Management

The BEM programme aims to produce graduates who can develop into highly competent and professional building engineers for Hong Kong, China and the international market. It aims to equip students with the knowledge and ability in the production of buildings and facilities so that they will be able to contribute effectively to project and facilities management teams engaged in complex building projects.

Programme Outcomes

Upon successful completion of the programme, the graduate is expected to action the following abilities:-

Category A Professional/academic knowledge and skills

1. To possess knowledge of building engineering principles, processes and methods for the successful completion of all types of construction projects.
2. To use the techniques, skills and engineering principles for different types of construction.
3. To apply construction management knowledge and skills in personnel, financial and operational practices and communication aspects required for efficient building production.
4. To identify, structure and analyse diverse problems arising from the changing social, economic, environmental and technological pressures.
5. To solve identified construction problems with appropriate solutions.
6. To evaluate alternative strategic options.
7. To select appropriate construction materials, practices and methods in compliance with sustainable development.
8. To exercise professional judgement in the consideration of alternatives in complex situations.

Category B Attributes for all-roundedness

As all undergraduate programmes are under the BRE scheme, category B of the attributes for all-roundedness are listed under the scheme.
3.2 Programme Aims of BSc (Hons) in Property Management

The PM Programme aims to provide students with a broad-based and interdisciplinary education in the context of property and housing management as well as facilities and corporate asset management and to develop them as all-rounders who can understand and work with the interplay between social, economic, political, legal, technological and commercial issues and problems incidental to the property management. Students are provided with both professional and vocational knowledge in property management including its operational logistics and multi-disciplinary facets. It is intended to prepare students for a professional career in property management in Hong Kong and the region with the essential knowledge and prerequisite skills for the profession.

Programme Outcomes

Programme outcomes refer to the intellectual abilities, knowledge, skills and attributes that an all-round preferred graduate from your programme should possess.

To ensure fulfilment of the goal of developing all-round students with professional competence, it is required that outcome statements encompass the following two categories of learning outcomes:

**Category A Professional/academic knowledge and skills**

Upon successful completion of the programme, the students are expected to action the following abilities:-

1. To apply professional and vocational knowledge in property management, including its operational logistics and multi-disciplinary facets
2. To identify and solve problems in property management practices
3. To communicate effectively with social skills as a competent property manager.
4. To practise as a professional property manager in compliance with the legal and ethical requirements of the profession
5. To appreciate the multi-disciplinary dimensions of property management practices and the interests of the stakeholders in the industry.
6. To explore options for the property management practices with creative and critical mindset.

**Category B Attributes for all-roundedness**

As all undergraduate programmes are under the BRE scheme, category B of the attributes for all-roundedness are listed under the scheme.

3.3 Programme Aims of BSc (Hons) in Surveying

The Programme aims to prepare students with fundamental knowledge and skills in the inter-disciplinary professions of land, property and construction for their immediate employability and lifelong learning. The Programme underpins surveying studies with the disciplines of economics, law, management and technology. Graduates will enter the professions of building surveying, quantity surveying or general practice surveying as graduate trainees but with full potentials to readily become full-fledged professional surveyors and finally take leading and strategic roles in the profession and business of land, property and construction and make contributions to the community through their chosen professional services.
Programme Outcomes

**Category A  Professional/academic knowledge and skills**

Upon successful completion of the programme, the students are expected to attain the following abilities:-

1. To comprehend and identify issues and problems concerning land, property and construction at project level.
2. To comprehend and identify issues and problems concerning land, property and construction at corporate level.
3. To comprehend and identify issues and problems concerning land, property and construction at industry level.
4. To comprehend and identify issues and problems concerning land, property and construction at macro social-economic and political level.
5. To advise clients through rendering surveying services.
6. To identify, formulate and solve problems related to the surveying profession and real estate industry.
7. To analyse and interpret data of the industry.
8. To formulate and implement strategies, policies and solutions for sustainable development and construction.

**Category B  Attributes for all-roundedness**

As all undergraduate programmes are under the BRE scheme, category B of the attributes for all-roundedness are listed under the scheme.

3.4 Attributes for All-Roundedness

Upon successful completion of the programmes under the BRE Scheme, the students are expected to possess:-

1. to possess skills to identify, analyse and solve problems.
2. to have an understanding of professional, social and ethical responsibilities.
3. to communicate effectively.
4. to reflect on knowledge gap for life time learning.
5. to contribute as team member and to lead effectively.
6. to transfer and replicate knowledge and skills to other industries.
7. to identify contemporary issues.

These all-rounded attributes are common to all the three programmes under the BRE Scheme.

4. Teaching and Learning Methods

The first year of study with its commonality provides a foundation study which explains the characteristics and multi-disciplinary nature of building and real estate industries and analyses the various components of the systems.

The second year of study offers to develop students’ abilities of considering and analyzing the constraints on and solutions/options and decision making skill to the building and real estate proposals, development, production and available resources. A sound academic and professional knowledge all-rounded attributes with and communication skills are thus developed.
The final year of study further develops students’ abilities of problems solving skills, critical thinking and be able to synthesize for new insights or views through dissertation and professional studies in projects. Students of all programmes are able to develop their areas of specialization or interest through studies of both core subjects and elective subjects. Both professional and all-rounded attributes are further enhanced through different studies.

Emphasis will be placed on student participation in the learning process under the close supervision and direction of academic staff to the student’s studies.

Student participation will be encouraged through:-

Tutorials
Student presentations in structured seminars
Guided reading in all subjects
Application of computer packages
Student involvement in professional studies, case studies, site visits, integrated and subject projects, guest lecturers, international study tour etc.
Final year individual dissertation and team projects for integrative and professional studies.

The following major teaching and learning (T & L) methods are implemented in the programmes under the BRE Scheme:-

1. Interactive Lecture
2. Tutorial/Seminar
3. Project-based Learning
4. Self-directed Learning
5. E-learning
6. Role Play
7. Problem-based Learning
8. International Study
9. Industrial/Site Visits

The primary objectives of the implementation of these T&L methods are to ensure students’ achievement in acquisition of knowledge and critical thinking and all-roundedness with professional competence defined by the programme outcomes.

Such constructive alignment of the T&L methods with the programme outcomes is illustrated with examples of subjects which may adopt one or two particular type(s) of T&L methods.

1. Interactive Lectures

   The interactive type of lecturing mode is encouraged and implemented in the programmes. The sequence of such lectures is as follows:-

   (i) Briefing, concepts, principles and fundamentals are introduced and explained with the requirement of necessary knowledge retention from students: e.g. site planning for complex tall building project, environmental sustainability in demolition and construction practices; quality and performance assessment to facilities, benchmarking process, etc.

   (ii) Application and case studies: Real-life building projects and cases are presented for drawing students’ focuses and analysis on issues and
solutions with the applications of principles and fundamentals learned e.g. site planning and construction of the recently completed building projects; comparison between different building projects.

(iii) De-briefing: Providing opportunities during the lecture to solicit Students’ views and perceptions. Students are encouraged to participate by raising questions and discussion.

(iv) Reinforcement: Reiterating the learning objectives of the topical unit through conclusive remarks, observations and contemporary issues. Students are encouraged to interpret issues and solutions holistically with knowledge-transfer to real-life situations and occasions e.g. site planning and construction process with considerations of speed and time of construction, cost, safety and environmental sustainability; quality and performance assessment to facilities with considerations of sustainability and management.

2. Tutorial/Seminar (T/S)

Tutorial/Seminars supplement T&L activities and implement lectures. T/S are used to amplify what are introduced and learned from the lectures. Students are encouraged to think critically, question and make inquiries, discuss problems/issues and make suggestions and proposals. In the case, where there are students presentations, peer discussion and criticism/review are encouraged. Other examples are students form groups of 2 to 5 and each group is given a question for discussion either in the beginning of the tutorials/seminars or given in advance. A leader is chosen to record and report important ideas to the T/S group. Students ‘buzz’ for about 10 minutes on the former case. Leaders take turns to report important points of their groups to the whole class. During reporting, teacher prompts students for explanations and suggestions. Students post up ideas and inquiry, if any. Lastly, the teacher gives feedback and invites the whole class in participation. The intended learning outcomes are an ability to communicate effectively through presentations and discussions/explanation of contemporary issues, comparing and contrasting ideas in view of different stakeholders of the industry with reference to knowledge gained during lectures. In doing so, students learn and gain the abilities delineated in the Programme Outcomes of professional/academic knowledge and competence. Moreover, all-rounded education especially in the areas of communication knowledge transfer and awareness of contemporary issues are attributed.

3. Project-based Learning

Projects are usually open-ended embedded with a real-life ‘research’ of information, re-visit of issues and proposal of solution(s). Students are given project brief whereby they are asked to find/identify and analyse problems/issues and propose method(s) to solve the problems. Such project brief involves investigation and study of problems originated from a contemporary issue (e.g. environmental problem) or building construction or real-estate related situation (e.g. housing construction or property marketing in housing) or a realistic workplace problem (e.g. design and erection of formwork and falsework for the in-situ construction of reinforced concrete school hall). Students are required to actively carry out their own studies, produce reports and present solutions in teams or individually.
Quite a few number of Category B attributes are exhibited in project-based learning.

The learning process and outcomes include:-

(i) The ability to identify, analyse and solve problems in their related professional studies.

(ii) The ability to function as team members or as leader – it is among the group to determine and distribute responsibilities and tasks of works to make decisions and agreement both internally and externally and to ensure work done.

(iii) An ability to manage/control time and plan works accordingly and effectively and work within reasonable time frame.

(iv) The ability to work in partnership with the skills of negotiation: ‘give and take’, and resolution of conflicts and disputes within a group selling.

(v) The ability to self-evaluate performance to ensure work quality.

(vi) The ability to seek advice and expert knowledge and be aware of own’s limitations and hence be able to identify knowledge gap for further learning.

(vii) An ability to differentiate performance, work and achievement priorities within given time frame and resources.

(viii) The ability to communicate effectively through aural, graphical, numerical and text presentation.

Project-based learning method is a comprehensive approach to instruction and learning whereby students need to actively participate with self-motivation and practise with an array of multi-disciplinary knowledge and skills. The development of research skills is promoted.

Students learn through both internalization (mental process) and externalities (peer affects, constraints, information, etc.), where these intrinsic knowledge is learned through project work in teams (groups) or individually.

Small-scaled project based learning assignments are adopted by some subjects (e.g. BRE435 Design, Adaptation & Conversion).

4. Guided Studies/Self-directed Learning

This component of guided study and self-directed learning creates a facilitation for and a favourable attitude towards independent learning for students. This will be one of the most important skills a student acquires from degree level education. Both student and lecturer play an active role in such learning.

Guided study/Self-directed learning is specially designed for particular subjects underpinned with strong research and investigation studies whereby an atypical pace of study and minimal intervention by supervisors or facilitators are required. In this case is the subject Dissertation. In general, self-directed learning is individualized instruction designed from the point of
view of the learner who studies individually at his own pace, place and time. However, self-disciplined is required by the students for progress monitoring with specified pre-arranged regular meeting. Study programme is scheduled in the ‘table of works’ and students have to formulate problem statement, research objectives, research design and methodology; carry out literature review and investigations in a pre-determined period of time. Hence, at times, students need to adjust their learning pace or content with the exercise of self-initiative and time management. The intended learning outcome is to develop life time learning abilities e.g. action plan decision making strategies, information funding abilities and achievement of targeted goals.

5. **E-learning**

Electronic learning (e-learning) provides a virtual learning environment allowing students to experience and learn similar to what they would experience in reality. In this environment, the support of computer, information technology and on-line teaching/learning platform is vital.

A web-site for a particular subject is designed to include the presentations of learning materials (e.g. journal papers, book chapters, etc.), downloadable notes or powerpoint notes, practising exercises quizzes and assignments for the topical units of the subject. Usually teaching/learning plan of the subject with information regarding grading and weighting of examination, test and assignments/coursework are also included. Hyperlinks to both local and overseas websites of related subject topics facilitate and guide students to seek most updated information and hence gain a wider perspective and in-depth understanding of the related topics. (e.g. sustainable development and construction, assessment of building performance, etc.).

Animation and film strips are also used to explain and simulate the actual construction process. Moreover, students can communicate among peers or with the subject lecturer through e-mails and chatroom. There are a number of e-learning subjects currently in use in the Department.

The Department actively supports web-based learning/teaching, and communication through WebCT and SMILE learning platforms. In particularly, SMILE is in fact designed and promoted by the BRE Department.

6. **Role Play**

A scenario simulated the real world situation usually in the management or legal aspect is adopted e.g. a ‘Group C’ contract on the government approved list facing a crisis of unsuccessful bidding during the downturn of construction industry has to lay off some of her employees. Students are formed groups of 5-6 and engaged in different roles as the Managing Director, Contracts Manager, site staff including land surveyor and mechanics, etc. The learners portray certain roles as a way of experiencing that roles. This provides a way for students to rise up to that situation in gaining experience/s in active thinking, problem finding and solving, negotiation, decision making and reasonable behaviour. The intended learning outcomes of role play activities are higher order thinking, application of management and communication skills, appreciation of opposite views and the importance of team and leader. While students are portraying the assigned roles, other students observe and analyse the behaviours. Peer assessment is provided.

7. **Problem-based Learning**
Problem-based learning is characterized by the use of actual cases with practical issues/problems e.g. part of the building under adaptation and conversion (e.g. the Landmark in Hong Kong): how disturbance can be minimized to the existing tenants in particular noise problem; how that part of building can be adapted and converted without disturbing the existing building services, etc. The inquiry and exploration leads to a series of learning task e.g. technical issues (environmental issues and engineering issues), communication (with tenants and sub-contractors), legal requirements, logistic of works, etc. Students, thus, gain concepts, knowledge and application within the learning process. Thus both the programme outcomes, subject outcomes and the attributes of all-roundedness are fulfilled.

8. **International Study**

An overseas study tour is organized during the summer semester of year 2 during their course of study (under the guidance of a tutor,) students are responsible for the organization and contact from the choice of destination to the arrangement of study visits to overseas academic institutions and professional/industrial establishments, transport and boarding arrangements budget controls, logistics, division of works, etc. Usually two members of staff will accompany the students for the study tour. The duration of the study tour is about a week. On return, a study report is produced together with an open oral presentation of the studies to other student faculty, teaching faculty, mentors and sponsors. The attributes for all roundedness in this programme are learned through this organization of study tour from initiative to production.

9. **Industrial/Site Visits**

Where appropriate, industrial/site visits are arranged for the students to reinforce their learning. The choices of the construction sites are selected in relevance to the teaching and learning content/activities. Through site visits, students learn by observation of the construction activities/processes and presentation by the on-site practitioners. Students are given the opportunities to ask questions related to practices to the site workforce and professionals. They will learn the co-relation between concepts/theories and the actual work practices. Site visits provide an interactive opportunity for students to learn, communicate, reflect and interact with environment including site investigation, information collection and analysis, which may help their understanding of the taught materials and doing their related assignments later in the course.

10. **Laboratory Studies**

The term 'laboratory' is given its broadest interpretation. This tends to mean the use of specialist teaching and learning facilities where students become involved in small group or individual work which seeks to simulate the professional environment. This work is under the supervision of lecturers and technicians, and may take place in specialist teaching/learning space such as an information technology laboratory; an environmental science laboratory; a building services laboratory; a project studio or management laboratory; a building technology laboratory; or Industrial Centre (IC).

11. **Coursework**
Students produce evidence of their competence through regular coursework commitments. Properly structured coursework provides proof points of reference and stimulates precision and planned study on the students’ part and offers opportunity for diagnosis and assessment by their lecturers. Students are informed at the commencement of their programme and the expectation of each subject.

5. **Work-Integrated Education (WIE)**

All full-time students must complete 2 training credits for work-integrated education (WIE) whilst for sandwich course is 18 training credits for (WIE).

The Department of Building and Real Estate has put a strong emphasis on the WIE element in the design of curriculum of all its UGC funded full-time programmes of the BRE Scheme to (i) affirm our position in offering academic programmes in a professional context; (ii) strengthen the competitive edge of our professional oriented programmes with quality learning and enhancement of employability of our students; and (iii) enhance all-round development of students.

**Rationale and Philosophy**

As a major provider of professional education in real estate and construction, the Department understands the importance and responsibilities of enhancing the intellectual as well as the holistic development of our students. Both the attributes for all-round (i.e. generic skills) and professional competencies are complementary. At present, the labour market is placing increasing demand on people to possess an appropriate combination of professional skills and generic skills so as to cope with a rapidly changing work environment. We hope to provide students with an education not only in the acquisition of their own area of professional specialization, but also skills that are transferable in their professional education. This will increase our students’ competitiveness in diversification and employability for multi-disciplinary work opportunities and environment in this rapidly changing socio-economic climate. WIE is a way to educate our students in learning and experiencing the multi-facets of workplace environment. We recognise however that WIE arrangements will be subject to the constraints of an industry that is both project based and comprises predominantly small and medium sized enterprises.

1. **Intended Learning Outcomes of the WIE components for BSc (Hons) in Building Engineering and Management**

1. To acquire on-site technical skills
2. To identify and solve problems related to construction practice
3. To communicate effectively
4. To contribute as a team member and lead effectively

2. **Intended Learning Outcomes of the WIE components for BSc (Hons) in Surveying**

1. To advise clients through rendering surveying services
2. To identify, formulate and solve problems related to the surveying profession & property industry
3. To communicate effectively
4. To contribute as a team member and lead effectively
3. **Intended Learning Outcomes of the WIE components for BSc (Hons) in Property Management**

   1. To identify and solve problems in property management practices
   2. To communicate effectively with social skills as a competent property manager
   3. To contribute as a team member and lead effectively

**Structure of the WIE Component(s)**

The WIE element in BRE will last for a minimum duration of FOUR weeks, which will take place in the summer after Stage-1 and before Stage-3 study normally except for the programme of BSc (Hons) in Building Engineering & Management (BEM). The WIE for BEM will take place in the summer after Stage 1 and before Stage 2 with IC acting as placement agent and assessor. The WIE element will be mandatory for all full-time undergraduate programmes and will bear TWO training credits.

The Department is aware of the University’s guideline that the learning outcomes of WIE can be geared either towards “professional knowledge and skills” or “attributes for all-roundedness and generic skills”. It is the view of the Department that, where possible, we will aim to gear our WIE activities to improve students’ professional knowledge and skills.

Part of the WIE would be to embrace sandwich course provision. The Department will introduce a sandwich element (min. duration of 36 weeks) in all undergraduate degree programmes starting from the 2005/06 cohort, and will, together with Student Affairs Office (SAO) and Industrial Centre (IC) assist students with arrangement for their placements in industry. This will be counted as a WIE element. In this case, it will bear EIGHTEEN training credits.

Other forms of placements such as relevant summer jobs secured by students may also be considered as WIE element. However, these activities must be endorsed by the Department and must meet the requirements of being “structured”, “measurable”, and in an organisational context.

WIE for students of BSc (Hons) in Building Engineering & Management (BEM). The Department will continue to utilise IC as an agent for the on-site placements for construction projects. These activities are assessed by IC site staff on the general and work performance of the BEM students involved. The Department will monitor the assessment of these students to make sure they have achieved the intended learning outcomes at the end of the programme, so that these activities can fulfill the WIE requirements for the BEM programme.
Assessment of the WIE Component(s)

The Department will adopt the following assessment methods for the WIE elements in all full-time undergraduate degree programmes except for the BEM programme. The assessment methods will include two components: (1) a reflective journal by the student(s), and (2) a report by the employer. For sandwich students, a log book is also required, which is essential for them to fulfill the requirement of the professional institutions.

Students will be required to document their workplace learning experience in reflective journals, which will be assessed in conjunction with an assessment report by the employer to see whether the WIE learning outcomes have been achieved. The Department may form an interview panel when necessary to assess whether students have achieved the intended learning outcomes.

6. Scheme/Programme Management

6.1 Scheme Committee

Composition

The Composition of the BRE Scheme Committee (SC) will be as follows:-

Chairperson
(i) Appointed by the Head of Department in which the Scheme is based;

Members
(ii) Head, Department of Building and Real Estate;
(iii) All Programme Leaders of the awards within the Scheme;
(iv) A representative of each department which does not host an award but is making a significant contribution to the subjects within the Scheme;
(v) One student representative from each award offered within the Scheme.

Terms of Reference

The SC will exercise the overall academic and operational responsibility for the Scheme and its development within defined policies, procedures and regulations including the following:-

(i) proposing student intake quotas for the awards within the Scheme for recommendation to the Head of the Department;

(ii) the effective conduct, organization and development of the Scheme, including:-

- ensuring the appointment of tutors as required by the Scheme (subject, year, admissions, placement, etc.), in consultation with the Head of Department;

- ensuring that the Scheme is staffed and resourced to agreed levels through recommendations to, and negotiations with, Heads of contributing departments;

- ensuring the mechanics of operation is organized and effective;
• the coordination of teaching and other inputs;

• the nomination of proposed external examiner(s), where necessary and as required by the professional bodies, for the approval of the FB; and

• the implementation of policies for monitoring student progress, student counseling, placement, etc.

(iii) stimulation and development of teaching methods and materials through Heads of Department, subject leaders, as appropriate;

(iv) review of academic regulations, admissions policy, assessment and examination methods;

(v) the submission of proposals and responses to appropriate professional bodies and external validating bodies via the Head of the department and in accordance with the University’s established procedures;

(vi) the continuing critical review of the aims, objectives and development of the Scheme;

(vii) the review and evaluation of the academic standard and the operation, health and progress of the Scheme taking into account the views of students on the Scheme;

(viii) proposing the introduction of new subjects for approval by the Head of the Department and seek endorsement of relevant subject offering Department before incorporation into the Scheme;

(ix) proposing new awards at the advice of Head of the Department and with the agreement of the relevant subject offering department;

(x) the determination and review of Scheme regulations and the submission of any proposals for change in regulations or policy to FB or to ARC via FB, as appropriate;

(xi) recommending to FB the curriculum changes for the awards, for which they are responsible or any other matter relating to the subjects and awards within their responsibility or concerning the Scheme as a whole; and

(xii) providing an annual review of the Scheme as part of the Annual QA exercise for the attention of FB.

6.2 The Chairperson of the Scheme Committee

The Chairperson of the SC is nominated by the Head of the Department and appointed by FB. The Chairperson is responsible for the day-to-day management as well as overall management of the Scheme, in particular;

(i) coordination of the management team;

(ii) administering the admissions procedure with the assistance of the Award Coordinators;

(iii) liaison with FB, Heads of department contributing to the Scheme, the Award Coordinators within the Scheme;
(iv) external liaison on behalf of the Scheme, for example with the validating bodies and external bodies concerned with credit transfer via the Head of Department;

(v) forward planning and the development of the Scheme within the policies of the University at the advice of the Head of the Department.

6.3 **Programme Leader**

The Programme Leader is responsible to the Scheme Committee Chairperson for the day-to-day management of the award. The Programme Leader is responsible for activities in relation to:-

(i) admission and registration of students;

(ii) student progress and assessment;

(iii) student counseling including arranging counseling for student choice of subjects relevant to their award;

(iv) resource management, special staffing requests, etc;

(v) providing the Faculty officers with the offering pattern of subjects for the award and necessary information for timetabling;

(vi) liaison with Scheme Committee Chairperson, other Programme Leaders of the Scheme, relevant subject leaders and Faculty officers as required;

(vii) academic and monitoring aspects of the operation and development of the award including review and validation;

(viii) keeping in close touch with the academic welfare and progress of students studying for that award and being aware of students' views about the award; and

(ix) preparation and production of handbooks and other materials for distribution to students of the Scheme jointly with other Programme Leaders.

6.4 **Year Tutor**

A Year Tutor is allocated to each year (stage) of the Programme. A tutor is generally involved in the teaching of the BRE Scheme and assists the Programme Leader in the day to day operation of the programme. Tutors are required to monitor students' progress, and to report unsatisfactory performance in coursework to the Programme Leader. An additional function is to act as a first line personal tutor who will assist the students in solving some of their more personal problems, particularly with the assistance of the Student Affairs Unit.
6.5 **Programme Management Committee**

A Programme Management Committee is responsible to monitor and control day-to-day running of the programme. The committee comprises Programme Leader, Deputy Programme Leader, Year Tutors, and Programme Dissertation Co-ordinator. The committee meets at least twice per academic year to consider progress of the students as well as receiving comments from the various subject lecturers or proposed changes to the programme.

6.6 **Head/Student Liaison Group**

A Head/Student Liaison Group, made up of the Head of Department and two student representatives from each year (stage) of individual award (programme), meets twice a year to discuss issues of concern.

6.7 **Staff/Student Liaison Group**

The Staff/Student Liaison Group, made up of two student representatives from each year (stage) of the programme, the Programme co-ordinators, and the Scheme Chairperson meets twice a year to discuss any issues such as student workload, teaching methods and the relevance of the materials taught.

7. **SUBJECT MANAGEMENT**

7.1 **Discipline Leader**

A Discipline Leader is responsible for the development of subjects within a particular discipline area across the credit-based honours degree programmes/awards in which they appear. In particular the discipline leaders assist the Scheme Chairperson and the Programme Leaders in scheme/programmes development and they are responsible for monitoring and co-ordination of development and examination standards of subjects in that discipline area. They ensure that the needs of the various awards are met, avoiding duplication and omission of material.

7.2 **Subject Leader**

The BRE Department adopts a team approach to teaching. Subjects are normally delivered by more than one lecturer with one of the team members designated as the Subject Leader responsible for the development of the subject and for teaching activities of the lecturers involved.

7.3 **Subject Lecturer**

A Subject Lecturer is responsible for the teaching and delivery of the subject and assessing the student performance.

7.4 **Subject Syllabus and Standard Subject Size**

Syllabus details, are provided in the attached SUBJECT PORTFOLIO. Each subject has an allocated credit value (the standard is 3 credits) and, in terms of effort, a student is expected to do 40 hours of study to earn a credit.
Subject Levels

The credit-based subjects are classified according to the University Credit-based System. Each subject is given a unique code that identifies the department offering the subject, the intellectual level and the discipline. For example, subject code BRE201 consists of the letter prefix "BRE" identifying the department as a subject offered by the Department of Building & Real Estate, "2" indicating that it is a level 2 subject, and "01" as the coding of that particular subject. The level codes are as follows:

<table>
<thead>
<tr>
<th>Level code</th>
<th>Explanation</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Sub A-Level standard</td>
</tr>
<tr>
<td>1</td>
<td>A-Level standard</td>
</tr>
<tr>
<td>2</td>
<td>Standard comparable to Year 1 of a 3-year honours degree programme</td>
</tr>
<tr>
<td>3</td>
<td>Standard comparable to Year 2 of a 3-year honours degree programme</td>
</tr>
<tr>
<td>4</td>
<td>Standard comparable to Year 3 of a 3-year honours degree programme</td>
</tr>
<tr>
<td>5</td>
<td>Master's level</td>
</tr>
<tr>
<td>6</td>
<td>Doctoral level</td>
</tr>
</tbody>
</table>

Although the level codes 2 to 4 are for undergraduate degrees, other awards may also use subjects with level codes 2 to 4 if the level of the subject is considered to be appropriate for the level of award. Therefore, level 2 subjects, level 3 subjects and level 4 subjects may be included in different years of the programmes.

Requisites, Co-requisites Exclusions

Each subject may have pre-requisites, co-requisites and exclusions. The pre-requisite of a subject must have been obtained before a student registers for that subject. However, the Department has the discretion to waive the pre-requisite requirements of a subject, if deemed appropriate. If a subject X has a subject Y as a co-requisite, both X and Y must be taken in the same semester. And, if subject X has subject Y as exclusion, a student having completed subject Y cannot have subject X count towards the award.

Credit Transfer and Subject Exemption

Credit Transfer will be given credits for recognized previous study, which will count towards the award requirement. University policy stipulates that normally, not more than 50% of the normal credit requirement for the academic award may be transferable from approved institutions outside the University, and not more than 67% of the normal credit requirement for the award can be transferred from programmes within the University.

Subject Exemption from taking subjects means that the credits associated with the exempted subjects will not count towards the award requirement. If a student is exempted from taking a specified subject because they have previously successfully completed similar subjects in another programme, another subject will have to be taken in order to satisfy the credit requirement.

Subject Registration

A student must register for a subject 2 weeks prior to the start of the semester in which it is offered. The schedule for subject registration includes an "add-drop" period of 2 weeks at the beginning of each semester.
8. **ASSESSMENT**

General Assessment Regulations (GAR) of the University governs the conditions for student assessment and progression and the recommendation of an award.

Different assessment methods including formative and summative assessments are adopted as deemed appropriate to the subjects depending on the natures of the subject disciplines and the alignment of the intend learning outcomes of the courses. The assessment methods are contained therein in the subject specifications which can be referred to the website of the Department (www.bre.polyu.edu.hk) are distributed to all students in the beginning of the academic year. It is also reinforced by the subject lecturers by informing the students at the learning commencement on the assessment modes, standards and criteria.

With the move to criterion-referenced assessment, rubrics are developed to assess student performance with a scoring scale along a task-specific continuousness of criteria for some subjects. Students work is evaluated against scoring standards/criteria. Such subjects are usually 100% continuous assessment, for example integrated projects, design projects, professional studies and dissertation. Innovatives, originality, research techniques, group effort, individual contribution or work, communication and presentation skills (oral and written), independence in working and co-operation with teams can be thus assessed according to the specified criteria and intended learning outcomes of the subjects.

In general, the student performance in each subject is assessed by coursework and examination respectively. Weightings are allocated to coursework and examination of a subject, e.g. 30% and 70%, 40% and 60% or 50% and 50% respectively. Coursework includes assignments, case studies, seminar/tutorial presentation, role playing, field work, tests and other forms of learning activities. Grades will be assigned to reflect both individual contribution and group effort in the case it is not an individual piece of work. Examination is an end of unit/subject assessment. Grades are usually awarded to the written examinations. Marking schemes are provided to ensure assessment and grading on student performance are based on criteria and standards. The quality of examination papers and marking schemes is scrutinized by the external examiners and departmental academic advisor.

Other than projects and dissertation, where appropriate, some subjects can employ 100% continuous assessment. Usually students are assessed in their performance attainment of technical skills over an extended period of time, for example, measurement, estimating & documentation, and engineering surveying.

In the case of group projects, both aggregating grades and assigning grades are given to group effort and individual contribution in a group. This is to ensure that there will be no ‘non performer’. Moreover, peer interactive learning in project proposal/solutions, and different components of the project, presentations, reports and communication are inclusive in the grading for the group effort.

8.1 **Assessment Methods**

Students' performance in a subject is assessed by either of the following methods:-

(a) **Coursework only:** To pass a subject by this method, a student must attain a minimum Grade ‘D’ in coursework (tests, assignments, projects, laboratory work, field exercises, presentations and other forms of classroom participation).
(b) Examination and Coursework (the weighting of each component is stated in the Subject Portfolio): To pass a subject by this method a student must attain a minimum Grade 'D' in coursework and a minimum Grade 'D' in the examination.

(c) Continuous Assessment: Both Projects and Dissertation are of this type of assessment where students are assessed through a period of time with stages of work and progress together with the final products of works. The ‘Guidance Notes for the Final Year Dissertation’ detailed the assessment and process.

Assessment methods and parameters are determined by the Subject Leader who will inform the students of the details at the beginning of each semester.

8.2 Subject Assessment Review Panel

The Subject Assessment Review Panel (SARP) is responsible for monitoring the academic standard and quality of subjects and ratifying subject grades. It meets at the end of each semester, normally in January and June. The Panel reviews the distribution of grades within a subject and finalises the grades at the end of each semester/term before submission to the Board of Examiners. The Board of Examiners will not attempt to change any grades.

Composition of the SARP is as follows:-
Chairman: Head, Department of Building and Real Estate
Members: Programme Leaders
Subject Leaders/Lecturers
Representatives from Contributing Departments (Co-opted Members)
Departmental Academic Advisor and/or External Examiners
Secretary: Departmental Executive Officer

8.3 Grading

At the end of each semester students will be informed of the grade achieved for each subject. Assessment grades shall be awarded on a criterion-referenced basis. A student’s overall performance in a subject shall be graded as follows:-

<table>
<thead>
<tr>
<th>Grade</th>
<th>Short Description</th>
<th>Subject Grading Description</th>
<th>Grade Point</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>Excellent</td>
<td>The student’s work is outstanding. It exceeds the subject learning outcomes in all regards.</td>
<td>4.5</td>
</tr>
<tr>
<td>A</td>
<td>Excellent</td>
<td>The student’s work is excellent. It exceeds the subject learning outcomes in nearly all regards.</td>
<td>4</td>
</tr>
<tr>
<td>B+</td>
<td>Good</td>
<td>The student’s work is very good. It exceeds the subject learning outcomes in the majority of regards.</td>
<td>3.5</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>The student’s work is good. It exceeds the subject learning outcomes in some regards.</td>
<td>3</td>
</tr>
<tr>
<td>C+</td>
<td>Satisfactory</td>
<td>The student’s work is wholly satisfactory. It fully meets all the subject learning outcomes.</td>
<td>2.5</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>The student’s work is satisfactory. It largely meets all the subject learning outcomes.</td>
<td>2</td>
</tr>
<tr>
<td>D+</td>
<td>Marginal</td>
<td>The student’s work is barely adequate. It fails marginally to meet all the subject learning outcomes.</td>
<td>1.5</td>
</tr>
<tr>
<td>D</td>
<td>Marginal</td>
<td>The student’s work is weak. It fails to meet the subject learning outcomes in some regards.</td>
<td>1</td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>The student’s work is inadequate. It fails to meet most of the subject learning outcomes.</td>
<td>0</td>
</tr>
</tbody>
</table>
The description and grade point corresponding to each grade form the basis of criterion referenced assessment of the subjects.

Subject passing grades are “A+” to “D” whilst “F” is a subject failure grade. No credit will be earned if a subject is failed. At the end of each semester/term, a Grade Point Average (GPA) will be computed as follows, and based on the grade point of all the subjects (failed subjects are included in the GPA calculation).

\[
GPA = \frac{\sum \text{Subject Grade Point} \times \text{Subject Credit Value}}{n} \\
= \frac{\sum \text{Subject Credit Value}}{n}
\]

Where \( n \) = number of all subjects (inclusive of failed subjects) taken by the student up to and including the latest semester/term, but for subjects which have been retaken, only the grade obtained in the final attempt will be included in the GPA calculation.

Exempted, ungraded or incomplete subjects and subjects for which credit transfer has been approved without a grade assigned to it, will be excluded from the GPA calculation. In addition, subjects from which a student has been allowed to withdraw (i.e. those with the code ‘W”) will be excluded. Subject which has been given an “S” subject code i.e. absent from examination, will be included in the GPA calculation and will be counted as “zero” grade point. GPA is therefore the unweighted cumulative average calculated for a student, for all relevant subjects taken from the start of the programme to a particular point of time. GPA is an indicator of overall performance and is capped at 4.0.

8.4 Absence from an Assessment Component

A student who has been absent from an examination, or other form of assessment, due to illness or other causes acceptable to the SARP, may be given another examination or other form of assessment, which will be regarded as a first assessment for grading purposes. This assessment shall take place before the commencement of the following academic year. In the cases of illness, the student will be required to submit a medical certificate.

8.5 Retaking Subjects

Normally, students may retake only those subjects that they have failed; i.e. obtained an F grade. Students cannot retake a subject if they have passed it with a grade C or above. Retaking a subject that has been passed at Grade D or D+ will require the expressed approval of the host department of the programme on which the student enrolls.
9. BOARD OF EXAMINERS

9.1 Composition of Scheme/Programme Board of Examiners

The membership of the Scheme Board of Examiners (BoE) will be proposed by the Scheme Committee Chairman and ratified by the Chairman of the Faculty Board (FB). Its composition will be as follows:-

Chairperson
(i) Head of the Department in which the Scheme is based;

Members
(ii) Scheme Committee Chairperson;
(iii) Programme Leader of the Programme within the Scheme;
(iv) Year Tutors of the programmes;
(v) Examination Officer of the Department;
(vi) External Examiner(s) where appointed, if available.

Co-opt Members
(vii) 4-5 subject leaders/lecturers

Secretary: Departmental Executive Officer

The composition of the BoE is as follows:-
Chairman: Head, Department of Building and Real Estate
Members: The Programme Leader
Programme Tutors
4 to 5 internal subject examiners
Departmental Academic Advisor and/or External Examiners
Secretary: Departmental Executive Officer

9.2 Responsibilities

The Scheme/Programme Board of Examiners (BoE) meets at the end of each semester, following the Subject Assessment Review Panel (SARP). The BoE is responsible to the Senate for making decisions concerning:

a) Classification of awards;
b) De-registration cases; and
c) Cases with extenuating circumstance.

The Scheme/Programme BoE will not attempt to change the grades for any student in any subject or condone failures. Decisions of the BoE, except those on award and de-registration cases which are straight forward, will be ratified by the Faculty Board. Any decisions by the BoE outside the general assessment regulations of the University supported by the Faculty Board, should be referred to the Academic Regulations Committee for ratification, all such cases shall be reported to the Senate. Decisions by BoE outside the programme regulations but within the general assessment regulations of the University fall within the authority of the Faculty Board (FB).
9.3 Appeals

Appeals against the decision of the Subject Assessment Review Panel / Board of Examiners must be made within 5 working days upon the public announcement of the examination results. A student should make the appeal in writing firstly to the Head of the BRE Department. The Department will inform the student of the appeal result and, if the appeal is successful, the Department will inform the Faculty.

10. PROGRESSION AND AWARD

10.1 Progression

At the end of each semester, the Board of Examiners determines whether each student is:

(i) Eligible for progression towards an award; or
(ii) Eligible for an award; or
(iii) Required to be de-registered from the programme.

A student will have 'progressing' status unless he falls within the following categories, either of which may be regarded as grounds for de-registration from the programme:

(i) the student has exceeded the maximum period of registration;
(ii) the student’s GPA is lower than 2.0 for two consecutive semesters and his Semester GPA in the second semester is also lower than 2.0; or
(iii) the student’s GPA is lower than 2.0 for three consecutive semesters.

Notwithstanding, a student may be de-registered from the programme before the 'third' semester if his academic performance is poor to the extent that the BoE deems his chance of attaining a GPA of 2.0 at the end of the programme is slim or impossible.

10.2 Eligibility for Award

A student will be eligible for award if all the following conditions are satisfied:

(i) Accumulation of the requisite number of credits as defined for the particular award;
(ii) Satisfying all the 'compulsory' and 'elective' requirements as defined in the definitive programme document; and
(iii) Having a Grade Point Average (GPA) of 2.0 or above at the end of the programme.

A student is required to graduate as soon as all the conditions for award are satisfied.
10.3 **Guidelines for Award Classification**

The following are guidelines for the Boards of Examiners’ reference in determining award classifications. The BoE will exercise its judgement as to the award for each student and may use other relevant information.

<table>
<thead>
<tr>
<th>Hons Degrees</th>
<th>All other Programmes</th>
<th>Guidelines</th>
<th>GPA or weighted GPA</th>
</tr>
</thead>
<tbody>
<tr>
<td>1\textsuperscript{st}</td>
<td>Distinction</td>
<td>The student’s performance/attainment is outstanding, and identifies him/her as exceptionally able in the field covered by the programme in question.</td>
<td>3.7+ to 4</td>
</tr>
<tr>
<td>2:i</td>
<td>Credit</td>
<td>The student has reached a standard of performance/attainment which is more than satisfactory but less than outstanding.</td>
<td>3.2 + to 3.7-</td>
</tr>
<tr>
<td>2:ii</td>
<td>Pass</td>
<td>The student has reached a standard of performance/attainment judged to be satisfactory, and clearly higher than the “essential minimum” required for graduation.</td>
<td>2.3+ to 3.2-</td>
</tr>
<tr>
<td>3\textsuperscript{rd}</td>
<td>Pass</td>
<td>The student has attained the “essential minimum” required for graduation at a standard ranging from just adequate to just satisfactory.</td>
<td>2.0 to 2.3-</td>
</tr>
</tbody>
</table>

10.4 A Pass-without-Honours degree award will be recommended only under exceptional circumstances, when the student has demonstrated a level of final attainment which is below the ‘essential minimum’ required for graduation with Honours from the programme in question, but when he has nonetheless covered the prescribed work of the programme in an adequate fashion, while failing to show sufficient evidence of the intellectual calibre expected of Honours degree graduates. For example, if a student in an Honours degree programme has a Grade Point Average (GPA) of 2.0 or more, but his Weighted GPA is less than 2.0, he may be considered for a Pass-without-Honours classification.
SUBJECT PORTFOLIO
Level 1 Subjects:
AMA 114 Remedial Mathematics
AMA 118 Basic Mathematics and Statistics
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA114</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>1</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:28 Tut:14</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 40% Examination 60%</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>School Certificate Mathematics</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>AMA111, 112, 113, 114, 115</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>K.J. Leung (AMA)</td>
</tr>
</tbody>
</table>

**Subject Aim:**

This subject is intended to:

This is a remedial course for those students who have not taken A-Level Pure Mathematics, or who have failed its examination. An approach emphasizing the fundamental concepts and definitions rather than a rigorous analytical treatment, will be adopted. The role of mathematics as a tool for engineering will be highlighted.

**Learning Outcomes:**

After studying this subject the student should acquire a basic understanding of the ideas and techniques of linear algebra, calculus, probability and statistics. They may also see how mathematics can be applied in various engineering contexts, and that the use of mathematics helps them to better grasp the concepts.

**Syllabus Content:**

**Calculus**

Functions: Linear and quadratic functions, factorization, inequalities; polynomials, factor theorem, remainder theorem, binomial theorem; rational functions, partial fractions; trigonometric functions; exponential and logarithmic functions; composite and inverses of functions.

Differential Calculus: Limit and derivative; techniques of differentiation, maxima and minima, curve sketching.

Integral Calculus: Definite and indefinite integral, fundamental theorem of calculus; techniques of integration; physical applications.

Infinite Series: Sequences and series, simple convergence tests; Taylor and Maclaurin series.

**Complex Numbers**

Arithmetic of complex numbers, conjugate, Argand diagram, polar form, De-Moivre’s theorem.

**Linear Algebra**

Arithmetic of matrices, inverse, determinant, linear system of equations, Gaussian elimination, Cramer’s rule; vector, independence, dot and cross product, lines and planes in 2 or 3 dimensional spaces.

**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

The method of learning will be composed of formal lectures and tutorials. The lecturer will present the study topics in the lectures. In tutorial class, the work will focus on problem solving and practical examples.

**Assessment (assessment of student performance resulting from learning tasks):**

Examination and coursework will constitute the 60% and 40% of the overall marks of the subject respectively. The coursework mark will be based on the assignments and seminar discussions.

**Reading List:**

*Foundation Mathematics*, Department of Applied Mathematics.
Subject Code: AMA118

BASIC MATHEMATICS AND STATISTICS

Contact Hours: Lect:28 Tut:14

Level: 1

Student Effort Hours: 120

Assessment Method: Examination 60% Coursework 40%

Credit Value: 3

Pre-requisites: School Certificate Mathematics

Co-requisites: Nil

Exclusions: AMA111, 112, 113, 114, 115

Subject Leader/Lecturer/Dept.: K.J. Leung (AMA)

Subject Aim:

This subject is intended to:

1. Provide students of FCLU without A-Level Pure or Applied Applied Mathematics background a basic understanding and skills of higher mathematics.

Learning Outcomes:

After studying this subject the student should acquire a basic understanding of the ideas and techniques of linear algebra, calculus, probability and statistics. They may also see how mathematics can be applied in various engineering contexts, and that the use of mathematics helps them to better grasp the concepts.

Syllabus Content:

Calculus

Limit, derivative, techniques of differentiation, maxima and minima, curve sketching, definite and indefinite integrals, fundamental theorem of calculus, techniques of integration, geometric and physical applications.

Linear Algebra

Matrix, determinant, linear system of equation.

Statistics

Descriptive statistics, frequency distribution, mean, standard deviation, probability, discrete and continuous random variables, normal distribution, sampling, hypotheses testing and estimations.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The method of learning will be composed of formal lectures and tutorials. The lecturer will present the study topics in the lectures. In tutorial class, the work will focus on problem solving and practical examples.

Assessment (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute the 60% and 40% of the overall marks of the subject respectively. The coursework mark will be based on the assignments and seminar discussions.

Reading List:

- Foundation Mathematics, Department of Applied Mathematics, The Hong Kong Polytechnic University, 2001
- L. Bostock & S. Chandler, Core Mathematics for A-Level, Stanley Thores, 1999
Level 2 Subjects:
BRE 203  Environmental Science
BRE 2031 Environmental Science
BRE 204  Structure I
BRE 206  The Legal Context of Construction & Real Estate
BRE 210  Information and Data Analysis
BRE 212  Construction Materials
BRE 216  Economics for Construction & Real Estate
BRE 217  Planning and Development
BRE 218  Integrated Project I
BRE 221  Professional Studies IC
BRE 222  Workshop Practice and Draftsmanship
BRE 223  Principles of Measurement
BRE 291  Construction Technology I
BRE 2921 Management for Construction & Real Estate
BRE 294  Construction Technology & Structure
AMA 290  Engineering Mathematics
APSS 265 Self-understanding and Communication Skills
CSE 254  Geology for Engineers
CSE 290  Introduction to Geotechnology
IC 202  Work-Integrated Education (In Summer Semester)
IC 279  Industrial Training (In Summer Semester)
LSGI 2961 Engineering Surveying
LSGI 297 Site Surveying
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE203</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Tut:14 Lab:8</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 40% Examination 60%</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>S.T. Chan (BRE)</td>
</tr>
</tbody>
</table>

**Subject Aim:**

*This subject is intended to:*

1. Equip students with an holistic understanding of the factors that contribute to the quality and performance of the built environment with respect to the technical knowledge learned in construction technology.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Understand the means of controlling the internal environment and provide standards of utility and comfort whilst utilizing principles of passive design to minimize the consumption of energy.
2. Review the causes of indoor air pollution and the means to provide a healthy environment.
3. Consider the effect of building construction and operation on the environment and appraise the role of sustainable development in minimizing impact on the external environment – use of resources, waste generation, pollution.

**Brief Syllabus Content:**

- Man and heat, heat transfer mechanisms, conduction, convection, radiation, thermal comfort.
- Climate and shelter, classification, global mechanisms, climatic data, micro-climatic building design.
- Design variables for energy efficient design and thermal performance of a building.
- Passive and active thermal controls, heating, refrigerators, ventilation and air conditioning.
- Principles of light, electromagnetic radiation, vision, luminance, glare, natural lighting and artificial lighting.
- Principles of sound, noise, noise transfer, insulation, acoustic design.
- Basics of electricity and magnetism, generation and power supply.
- Use of resources, energy efficiency, waste reduction, land use, damage to the environment, sustainable development.
- Environment assessment.
- Indoor air quality.
Experimental work:

Environmental Science: 2 experiments each of 2 hours duration from the following list:-
1. Lamps – measurement of efficiency.
3. Light fittings - determination of intensity distribution.
4. Daylight – measurement of daylight factor.
5. Absorption - determination of sound absorption coefficient.
6. Oral environment - use of sound level meter to investigate.
7. Reverberation - measurement or reverberation time.
8. Thermal comfort - investigation using thermal comfort meter.
9. ‘U’ values - determination of ‘U’ value of a building element.
10. Thermal radiation - measurement of radiant temperature.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Teaching periods will adopt a range of methods which could include lectures by staff, small group discussions, student presentations, project based and problem-solving tasks, laboratory and case study work. Where appropriate, the use of computer assisted learning techniques will be employed.

The intention is to create an environment that encourages active learning. Students will be encouraged to reflect on their learning activities to review what they have learned and to plan further action and activity.

Assessment strategy (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute the 60% and 40% of the overall work of the subject respectively. The coursework mark will be based on the assessments of assignments projects, presentations, peer-group critiques, tests and examinations. Assessment methods are intended to ensure the students achieve the learning objectives set, and assist learning through constructive feedback.

Reading List:


Supplementary:


ENVIRONMENTAL SCIENCE

Subject Aim:

This subject is intended to:

Equip students with a holistic understanding of the factors that contribute to the quality and performance of the built environment with respect to the technical knowledge learned in construction technology.

Learning Outcomes:

Students will demonstrate their ability to:

1. Identify the fundamentals of environmental science - heat, light, sound and their performance requirement, and the fabric of a building as a passive environmental controller of climate.
2. Appraise the ordinance of environmental science criteria upon design and construction of the built environment.
3. Demonstrate the basic principles and concepts for the major building services engineering systems found in buildings.
4. Combine/demonstrate the knowledge of passive and active controls in building design.

Brief Syllabus Content:

Climate and shelter, classification, global mechanisms, climatic data, micro-climatic building design.

Heat transfer mechanisms, conduction, convection, radiation, thermal comfort.

Design variables for energy efficient design and thermal performance of a building.

Principle of light, visions, luminance, glare, natural lighting and artificial lighting.

Principles of sound, noise transfer & control and building acoustics.

Power generation, electricity supply and distribution.

Water supply and distribution.

Soil and waste water disposal.

Passive and active thermal controls, heating, ventilation and air conditioning.
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Teaching periods will adopt a range of methods which could include:

▪ interactive lectures by staff;
▪ small group discussions;
▪ student presentations;
▪ project-based tasks; and
▪ laboratory works.

The intention is to create an environment that encourages active learning. Students will be encouraged to reflect on their learning activities to review what they have learned and to plan further action and activity.

Assessment strategy (assessment of student performance resulting from learning tasks):

The assessment will be based on:

▪ laboratory report;                  )
▪ projects;                                )
▪ presentations;                        )
▪ peer-group critiques; and  ) - coursework
▪ examination.

Assessment methods are intended to ensure the students to achieve the learning outcomes and assist learning through construction feedback.

Coursework and examination will constitute 40% and 60% of the overall work of the subject respectively.

Reading List:

Recommended:


Supplementary:

Subject Code: BRE204  
Level: 2  
Contact Hours: Lect:21 LB/TU:21  
Student Effort Hours: 120

### Structure I

**Assessment Method:**  
Coursework 30%  
Examination 70%

**Credit Value:** 3

**Pre-requisites:** Nil  
**Co-requisites:** Nil  
**Exclusions:** Nil

**Subject Leader/Lecturer/Dept.:** C.H. Yam (BRE)

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**Subject Aim:**

*This subject is intended to:*

1. Encourage an appreciation of the structure of buildings.  
2. Develop concepts of structural action, leading to an ability to model, analyse and design common elements and structural frames, by understanding simple structural framing.

---

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Use mathematical modelling to explain the behaviour of building materials and structures.
2. Apply the concepts of structural mechanics to solve structural problems involving beams, columns and statically determinate frames.
3. Quantify and analyse the internal and external forces (i.e. internal moments/stresses and external loads) acting within and upon a structural component under various anticipated loading conditions.
4. Design simple structural elements to withstand these forces in their respective loading conditions.

---

**Brief Syllabus Content:**

**Identification of forces and their effects on structures:** Point and distributed static loading, (quasi-static) wind loading, load transfer in common building structures of various forms.

Reaction of structural materials to imposed loads (with induced stresses and deformation).

**Statically determinate truss:** Computation of internal forces using the Method of Joints and Method of Section.

**Stresses:** The induced stresses as a permutative combination of tension, compression, flexural bending moment and shear.

**Beams:** Simple flexural theory, computation of bending stresses, shearing force and bending moment distribution, deformation and deflection of beams, sizing of simple steel beams to current codes.

**Columns and walls:** Simple buckling theory of columns, effective length and slenderness ratio in relation to fixity conditions, combined stresses as subjected to eccentric axial load, sizing of steel columns to current British Standard.
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

**Interactive Lectures** will enable students to:
1. analyse the internal forces of truss members, beams and columns;
2. analyse the strength of the materials for axial, bending and shear loadings.
3. apply the structural concept to design simple beams, columns and connections.

**Tutorial** will enable students to:
1. consolidate the structural mechanics and analysis concepts through problem-solving assignments and discussions.

**Laboratory** will enable students to:
1. identify the structural behaviour of simple truss, beams, and columns.

Assessment strategy *(assessment of student performance resulting from learning tasks):*

Assessment comprises of five parts:
1. Problem-solving assignment  
2. Laboratory report  
3. Mid-term test  
4. Final examination

Assessment strategy will assess students in the ability to identify and appreciate basic concept of structural mechanics to model, analyse and design simple structural elements.

Coursework: 30%
Final Exam.: 70%

Reading List:

**Recommended:**


**Supplementary:**


*Structural Use of Concrete - BS 8110: Part 1*, 1997 British Standards Institution

*Structural Use of Steelwork in Building - BS 5950: Part 1*, 2000 British Standard Institution

*Steelwork Design Guide to BS 5950: Parts 1 and 2*


<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE206</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>2</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 30% Examination 70%</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>K.H. Wong (BRE)</td>
</tr>
</tbody>
</table>

**THE LEGAL CONTEXT FOR CONSTRUCTION AND REAL ESTATE**

**Subject Aim:**

This subject is intended to:

1. Enable students to evaluate important legal concepts within the Hong Kong legal system and apply the same in the content of construction and real estate.
2. Examine the law of personal obligations.
3. Develop intellectual skills, with particular reference to analysis and reasoning skills.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Understand and evaluate sources of Hong Kong Law.
2. Apply the basic concepts, principles and remedies in the law of contract and tort to the context of construction and real estate.
3. Compare and contrast the law of personal obligations and the concept of property.
4. Use knowledge and reasoning skills to solve legal problems out of factual situations.
5. Reflect and review their legal knowledge in the societal context.
6. Communicate effectively.

**Brief Syllabus Content:**

The Hong Kong Legal System: sources of law; the court system; legal personnel; how legislation and case law is made; the Joint Declaration and the Basic Law.

Legal reasoning: the language of the law; reading legal materials; legal argument.

Contracts: general principles of contract law; nature of contractual liability; types of contract, (agency, sale of goods, standard form of building contract); remedies.

Torts: principles of tortious liability; negligence; nuisance; trespass; Rylands v Fletcher; occupiers liability; breach of statutory duty; remedies.

Introduction to property law: concept and classification of property; definition of land; the system of landholding in Hong Kong.

Methods and procedures for resolving legal disputes: litigation; arbitration; alternative dispute resolution.

An Introduction to the Law of the PRC.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The sequence of learning in this module is organized around topics with a pattern of active and interactive tasks which occur before, during and after class contact sessions. Each topic is structured as follows: preparation activity, learning activity, feedback, reflection and evaluation, action planning, and review activity, which serves as the next preparation activity.

The teaching strategy involves five phases through which students learn intellectual and academic skills necessary for legal study, in parallel with learning key concepts for later study:

**Phase 1:** Learning how to learn law – Topic focus: accessing the law.
**Phase 2:** Learning how to use law to identify legal issues – Topic focus: understanding legal concepts and rules.
**Phase 3:** Learning how to apply legal knowledge – Topic focus: understanding legal argument.
**Phase 4:** Critical Judgment – Topic focus: Justifying conclusions.
**Phase 5:** Problem-solving – Topic focus: integrating learning.

The programme is developed through learning support groups, specially designed heuristics, reflection and self-assessment tasks.

The learning support groups facilitate small group activities, promote effective learning, develop higher order intellectual abilities, give peer group support for learning, and promote active involvement of students in their own learning.

Reflection exercises are designed to turn experiences into learning. They help students assess strengths and weaknesses, and identify remedial action.

Self-assessment tasks are one type of reflection exercise through which students may test out knowledge and understanding of legal concepts and rules, and develop reasoning skills. Guidance on self-assessment will be distributed to each student. The primary objectives of formative self-assessment are self-learning; measurement of attainment of the learning outcomes; and efficient and effective preparation for summative assessments.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Assessment is designed to contribute to learning, and to determine the extent to which a student has achieved the learning objectives in the following ways:

1. In-class test/project work, comprising questions to test attainment of legal concepts.
2. A 2 hour examination comprising a combination of breadth and depth problems designed to assess knowledge, understanding, application and analysis of legal concepts, rules and principles.

**Reading List:**

**Recommended:**

Clement Shum, *General Principles of Hong Kong Law*
Michael Fisher, *Contract Law in Hong Kong: Cases and Commentary*
Ian Dobinson & Derek Roebuck, *Introduction to Law in the Hong Kong SAR*
Jill Cottrell, *Legal research: a guide for Hong Kong students*, Hong Kong University Press
Betty Ho, *Hong Kong contract law*, Butterworths
Vanessa Stott, *An Introduction to Hong Kong Business Law*
Bryan S. Bachner, *Hong Kong Tort Law*
Sarah Nield, *Hong Kong Land Law*
Roger Nissim, *Land Administration and Practice in Hong Kong*, 1998
P.P. Sherrington, *Civil Litigation, Vol.1*
Kaplan, Spruce & Moser, *Hong Kong and China Arbitration: Cases and Materials*
Albert Chan, *An Introduction to the Legal System of the PRC*
Peter Corne & Susan Finder, *A Guide to the Legal System of the PRC*

Legal database in PolyU’s library
Supplementary:

*Authorized Hong Kong Law Reports and Digest*, Sweet & Maxwell
*Halsbury Laws of Hong Kong*, Butterworths
*Hong Kong Cases*, Butterworths
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<td>Assessment Method</td>
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<td>Credit Value</td>
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<td>Pre-requisites</td>
<td>Nil</td>
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<td>Subject Leader/ Lecturer/Dept.</td>
<td>D.W.M. Chan (BRE) A.K.D. Wong (BRE)</td>
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</table>

**INFORMATION AND DATA ANALYSIS**

**Subject Aim:**

This subject is intended to:

1. Develop the ability of students to understand and apply statistical concepts and computer & IT software packages in manipulating data for presentation, analysis and decision-making throughout the process of construction and real estate developments.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Apply the knowledge of fundamental statistics in collecting, organizing, summarizing, presenting and analyzing data, as well as drawing valid conclusions.
2. Use computer programs/ information management systems to search information, analyze and document data, as well as make reasonable decisions.
3. Communicate effectively and work in collaboration with other members of the project team in a professional context.
4. Adopt professional skills to identify, analyze and solve problems.

**Brief Syllabus Content:**

**Information Technology**
- Introduction to computers, networks and information systems
- Searching on the Internet and construction IT
- Computer applications in information control/ electronic Documentation
- Study of construction integrated management system
- Presentation of information with multimedia
- Introduction to profession-specific information systems for building surveying, construction management, quantity surveying and real estate

**Data Analysis**
- Descriptive statistics
- Probability theory
- Random variables and probability distributions
- Sampling theory and sampling distributions
- Hypothesis testing and decision making
- Introduction to statistical programs

**Learning and Teaching Approach** (tasks and activities designed to achieve learning outcomes):

Lectures will be used to present essential concepts and principles of the various subject areas. Tutorial and laboratory sessions, where appropriate, will be used for discussion, problem-solving, hands-on demonstration and presentation. Interactive multimedia self-accessed learning materials will be provided via the department’s computer network.

*Teaching activities:* Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Assessment strategy** (assessment of student performance resulting from learning tasks):

The subject will be assessed on a continuous basis and no examination is required. ‘Information technology’ and ‘data analysis’ will constitute equal proportions of the total coursework mark of the subject respectively. The total coursework mark will be based on a portfolio comprising a series of problem-based assignments, written tests, group reports and presentations. Marks will be allocated on both group effort and individual basis.

**Reading List:**

**Information Technology:**


**Data Analysis:**


**Supplementary:**


CIOB, *Construction Computing.* CIOB.


CONSTRUCTION MATERIALS

Subject Aim:

This subject is intended to:

1. Enable students to be conversant with the properties and behaviour of some common materials of building construction.
2. Develop the ability to test and select materials for such construction.

Learning Outcomes:

Students will demonstrate their ability to:

1. Identify the properties of common construction materials and theoretical modeling of their behaviours under different environments, short- or long-term.
2. Appreciate different material, mechanical tests and quality control tests of steel and concrete.
3. Select appropriate materials for building construction.

Brief Syllabus Content:

Metals:
Structure of metals: Atomic bonding, crystal structures and crystal geometry, solid solutions and intermediate compounds, equilibrium diagrams.
Deformation of metals: Elastic deformation, plastic flow, ideal strength, mechanisms of slip, origin of dislocations.
Mechanical Testing: Tensile test, hardness test, impact test, fatigue test, creep test.

Concrete:
Constituent materials:
Cements – chemical composition, fineness, hydration, setting and hardening. Types.
Aggregates – physical properties, shapes and surface textures, grading. Types.
Admixtures – types.
Concrete mix design and quality control: required concrete properties, durability strength, workability, concrete mix design.
Statistical quality control, Shewart control charts, Cumulative sum control charts.
Testing of Concrete.

Timber, plastics, waterproofing materials and polymers, glazing materials

Brief introduction of smart materials and innovative products and their possible use in buildings

Laboratory:
Mechanical testing of metals. Non-destructive testing of concrete. Concrete mix design.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
## Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Basic knowledge of construction materials will be provided in lectures. Tutorials will be conducted mainly in the form of example class and problem-solving session to enhance students’ understanding of the subject matter. Laboratory works provide opportunities for testing of a range of different construction materials in particular: metals and concrete.

Visits to the foundry and metal casting, welding and plastics workshops and the University’s Industry Center.

Destructive and non-destructive testing of hardened concrete, metals, plastics, timber to be performed at the Building Diagnostics and Inspection Technology Laboratory.

## Assessment strategy (assessment of student performance resulting from learning tasks):

70% examination + 30% coursework. The coursework component will consist of tutorial problems and laboratory reports.

## Reading List:

### Recommended:


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<tr>
<td>Level</td>
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<td>Contact Hours</td>
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**Assessment Method**: Coursework 40% Examination 60%

**Credit Value**: 3

**Pre-requisites**: Nil

**Co-requisites**: Nil

**Exclusions**: Nil

**Subject Leader/Lecturer/Dept.**: Y.H. Chiang (BRE)

**Subject Aim:**

*This subject is intended to:*

1. Provide students with the economic aspects of the real estate and construction industry and its role on the general economy.
2. Introduce to students the institutions within which the industry and its professions operate and interact with.
3. Enable students to identify and analyze industry-wide problems based on an understanding of the market structure, performance and behaviour of the industry.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Describe the market structure of the real estate and construction industry
2. Articulate the economic and social roles and contributions of the real estate and construction industry to the general economy, and how the general economy and the industry affect each other.
3. Inter-relate the market structure with the performance, behaviour and problems of the industry.

**Brief Syllabus Content:**

- An overview of market structure, performance and behaviour of the real estate and construction industry in Hong Kong.
- The role of the real estate and construction industry on the national economy, and its sustainability.
- An inter-sectoral analysis of real estate, construction and their related industries including the financial and banking sectors.
- The role of surveying and property management consultants in project and property management.
- A comparative study of the real estate and construction industry in Asian economies.
### Experimental work:

Not applicable

### Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Case studies on current issues of the real estate and construction industry, to be followed by seminar presentation. Students would be asked to identify and diagnose key problems, analyse data and information, and prescribe a solution.

### Assessment strategy (assessment of student performance resulting from learning tasks):

Students will be assessed through coursework and examination. The coursework shall comprise seminar presentation and written reports. Presentation and communication skills will be assessed through verbal presentation of group topics, and through students’ ability to facilitate discussions and their participation in them. Their understanding will be assessed through their group reports and individual reflective journals on the topics including: the market structure and performance of the real estate and construction industry, the behaviour of its firms and the people in the different sectors, and the critical problems and major issues as identified in various local and overseas government reports. The examinations will assess the students’ ability to articulate the major social-economic aspects of the real estate and construction industry, and their ability to identify and analyze industry-wide issues and problems. Examination and coursework will constitute 60% and 40% of the overall grade.

### Reading List:

**Recommended:**


**Supplementary:**


Hong Kong Polytechnic University, AsiaConstruct Annual Country Reports on Construction and Real Estate Industry.

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<td>Lecturer(s)/Dept.</td>
<td>C.W. Yeung / BRE</td>
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<td>H.T. Choy / BRE</td>
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**PLANNING AND DEVELOPMENT**

**Subject Aim:**

This subject is intended to:

1. Comprehend the socio-economic and institutional principles governing land use patterns and building forms in cities.
2. Review the town planning framework and land development process.
3. Evaluate contemporary government policies and regulations on land use, town planning as well as urban development.

**Learning Outcomes:**

Students will demonstrate their abilities to:

1. Analyze the socio-economic and institutional factors affecting land use patterns, urban built-forms, and growth and decline of cities.
2. Comprehend the regulations and practices related to urban planning and development context.
3. Diagnose the urban planning cum development problems in cities and show the problem-solving skills in relation to the problems.
4. Communicate and work effectively with various professionals involved in the land conversion process.

**Syllabus Content:**

**Planning Issues**
- A review of urban planning system in Hong Kong and the problems associated with it.
- Public consultation in the urban planning process; planning application and development control issues.
- Urban design and environmental planning; compensation and betterment associated with urban planning.
- Urban renewal and rural area planning problems in Hong Kong.
- Regional planning theories and policies; Hong Kong in the regional context of South China.

**Development Issues**
- An overview of the land conversion and development process.
- An introduction to statutory and administrative control systems related to urban development.
- An evaluation on the tactics adopted by the professionals to tackle the common problems arising from the urban development process.
- A critical review of government policy affecting the land development industry.

**Learning and Teaching Approach:**

Relevant theories, concepts and regulations will be introduced in lectures, supplemented with applications and discussions during seminars. Students will further appreciate the subject by conducting a case study and / or writing a term paper.

**Assessment Methods:**

Examination: 70%, students are required to sit in a two-hour examination.
Seminar Project/ Term paper: 30%, students are required to hand-in a report or term paper in which the abilities stipulated under the Learning Outcomes session will be testified.
Reading List:

Recommended:

• Consumer Council (1996), *How Competitive is the Private Residential Property Market?*, Hong Kong: Hong Kong Consumer Council.


• Hong Kong Institute of Planners (1996), *Planning in Hong Kong 1997 and Beyond*.

• Neild, S. (1992), *Hong Kong Land Law*, Hong Kong: Longman.

• Nissim, R. (1998), *Land Administration and Practice in Hong Kong*, Hong Kong: Hong Kong University Press.


• Wong, W. and Chan, E. (1997), *Professional Practice for Architects in Hong Kong*, Hong Kong: PACE Publishing Ltd.


Supplementary:

• Annual Reports, various issues, Urban Renewal Authority, Hong Kong.

• Buildings Ordinance, Cap. 123 of Laws of Hong Kong.


• Property Reviews, various issues, Rating and Valuation Department, Hong Kong.


• Town Planning Ordinance, Cap. 131 of Laws of Hong Kong.
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<td>Nil</td>
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<td>Exclusions</td>
<td>Nil</td>
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<td>Subject Leader/ Lecturer/Dept.</td>
<td>B.S. Tang (BRE) Y.H. Chiang (BRE) K.H. Wong (BRE) C.H. Yam (BRE)</td>
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**INTEGRATED PROJECT I**

**Subject Aim:**

*This subject is intended to:*

1. Provide a platform for students to reflect on and integrate their knowledge at Year 1 level for applications in practical research issues related to the building and real estate industry
2. Encourage student-centred learning and develop their problem solving abilities
3. Develop the generic competence of the students and encourage them to excel in competitive and cooperative environment

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

**Academic Outcomes**

1. Describe the major practical issues (arguments, problems and debates) in the building and real estate industry
2. Relate these issues to their personal and professional development
3. Synthesize the knowledge of different disciplines in asking the right questions
4. Evaluate these questions in a systematic and analytical manner and articulate arguments
5. Reflect on the current issues in the building and real estate industry

**Generic Outcomes**

1. Gather and analyze relevant information using appropriate technology
2. Communicate the arguments in a clear and articulate manner through written work and verbal presentation using appropriate academic conventions
3. Identify and propose solutions to the problems with sound justification
4. Develop critical and creative minds
5. Work independently and identify needs for self-learning and self-improvement
6. Co-operate with others in a team working environment to excel for the common goal

**Brief Syllabus Content:**

*Introducing the building and real estate industry:*
- Importance, role and functions in the society
- Market structure, industrial organization and competitive environment
- Government, law and industry, etc.

*Building and real estate professionals:*
- Role of professionals and division of responsibilities
- Globalization and its impact on professionals
- Education, training and continued professional development, etc.

*Current issues in building and real estate industry:*
- Sustainability and environmental issues
- Urban development, urban form and built environment
- Technological applications, advancement and development
- Building maintenance and management, etc.
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes)*:

This subject will be delivered by means of student-designed team project, guided study, seminars and interactive lectures.

The main thrust of this subject is to complete a team project that involves primary data collection and analysis. Students will be required to divide into project teams and each team will carry out a study/survey project of its own design. The project should, as far as possible, use the whole class of students as its pool of study objects and data sources. The study topic should address the relevant subject matters that link the students with one or more issues in the building and real estate industry. Each team is required to prepare a brief study proposal and work plan. The study should make use of simple data collection techniques and analysis tools. The study proposal must be approved by the supervising teaching staff before actual study work is being carried out. Each team is required to present the project findings and submit a team report. Completion of the team projects allows students to achieve all the learning outcomes.

Guided study enables small group interaction between the teaching staff and the teams in the preparation of study proposals. It also allows students to communicate, discuss and resolve problems they have encountered in completing their team projects.

Seminar provides the opportunities for the students to present their project proposals, carry out actual study work and present study findings in front of the whole class. Seminars are intended mainly to train students on their generic competence.

Interactive lectures allow the teaching staff (and the visiting speakers from the industry) to brief the students on the key contents of the syllabus. These lectures enable the students to learn to describe the current issues in the industry, relate these issues to their personal development and synthesize the subject matters.

Assessment strategy *(assessment of student performance resulting from learning tasks)*:

Student performance in this subject is entirely based upon continuous assessment. Students will be assessed on both individual and team efforts, and at various stages of their work. The deliverables of the students include the study proposal, the final study report and their presentations. Written submissions will be assessed on the basis of their relevance, accuracy, communication, comprehensiveness and validity of analysis, practicality, creativity and imagination. Verbal presentations will be assessed in terms of the communication skills, the quality of visual aids and styles.

Indicative Reading List:


PROFESSIONAL STUDIES IC

Subject Aim:

This subject is intended to:

1. Provide students with extensive training on different technical aspects in order to make them aware of a real-life working environment and equip them with necessary skills to meet the industry’s requirements.

2. Provide students an opportunity to consolidate, integrate and apply their knowledge learned through different subjects.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Work individually and by team work.
2. Gather information using library, computer and other facilities.
3. Aware the process of defining a brief, setting objectives, evaluating options, justifying selection of optional solutions.
4. Understand how to integrate the subject content and apply it to practical scenarios.

Brief Syllabus Content:

In general, several workshops and projects will be given to the students which will involve their critical analysis and extensive research works basing on the professional knowledge acquired. The projects will focus on either practical real-life topics or simulated cases. Students should expect to carry out literature research as well as contacting the industry for information collection.

The projects will be focusing on one or more of the following disciplines: construction technology; parties involved in the building industry; building economics; building project management as well as property management.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The learning methodology of this subject is based on a self-development approach where students’ initiatives and participation are substantially demanded. A series of student-participation activities will be included. This subject emphasises closer tie with the industry and students can learn more about their future professional career through practical examples. This practice is similar to the “on-the-job training” commonly provided by the industry. It aims to train up students in parallel with the industry.

In addition to introducing the subject to students through lectures and seminars, discussion, briefing and question-and-answer time will be incorporated into the teaching methodology in order to encourage creative thinking and discussion. Moreover, such arrangement will also enhance students’ problem-solving ability and organisation skill.

Assessment strategy (assessment of student performance resulting from learning tasks):

Continuous assessment will be used to evaluate the performance of student. Students may be required to illustrate their work by oral presentation in addition to written report. Normally students will work and be assessed in groups but individual assessment may also be conducted if necessary. Peers assessment may also be introduced which is another learning approach for the students.
Subject Code: BRE222

WORKSHOP PRACTICE AND DRAFTSMANSHIP

Level: 2
Student Effort Hours: 120
Assessment Method: Coursework 100%
Credit Value: 3
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: Ir. W.K. Kwok (IC)

Subject Aim:

This subject is intended to:

1. Provide an opportunity for students to ‘learn by doing’ in terms of participating in practical construction work, drawing interpretation and preparation.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Appreciate good skills and workmanship for the major trades in building projects.
2. Aware drawing interpretation and draftsmanship in manual and computer application.

Syllabus Content:

**Formwork**
Introduction to types of formwork used for precast and ‘on-site’ work, and to the supports used with such formwork.

Timber formwork for beam and column detailing.

**Concrete Practice**
Concrete - types, materials, mixtures, workability.

Batching, mixing and placing of concrete.

Site Quality Control tests.

Concrete finishes.

**Reinforcement Practice**
Reinforcement types, uses, materials, accessories.

Erection of steel reinforcement with thin wall construction.

Erection of steel-ply formwork.

**Plumbing and Drainage**
Drainage Systems - types, uses, materials.

Laying and jointing pipes, water test.

Trench timbering, the erection of struts, walling and boarding.

**Structural Steel Work**
Structural Steel Work - design, erecting and fixing features.

Jointing of beams and columns.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Syllabus Content: (Cont’d)

Drafting
Construction drawing: Drawing practice based on BS1192 & BS308. Integration of drawing practice with building technology including sketching simple projections and perspective. Practical work (each student will carry out an individual project to produce building drawings).

CAD
Introduction to CAD: Types, uses, merit, cost factors involved; Software Features of typical CAD systems for major construction projects.

Basic 2D geometry functions - point, line, circle, arc.; Display functions - zoom, pan, fit, redraw, regen.; Annotation functions - dimensioning, test, label; Attributes - line thickness, colour, layer, filling; Plotting - different of plotting devices; Introduction to 3D drawing features - isometric, perspective, oblique projections, surface and solid modelling; Simple animation - flythrough, movie production.

Learning and Teaching Approach:
A practical introduction to selected types of building work with reference to types of materials, their selection, preparation, identification of defects, handling and storage, associated site operations, inspection and testing. The aim will be achieved through student participation and demonstration at the Industrial Centre.

Assessment:
Coursework will constitute the 100% of the overall marks of the subject. The coursework mark will be based on the assignments and seminar discussions.
Subject Code: BRE223  
Level: 2  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120

Assessment Method: Coursework 100%  
Credit Value: 3

Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: Nil

Subject Leader/Lecturer/Dept.: Dr. D.S. Drew (BRE)  
Dr. M.F. Ho (BRE)

**PRINCIPLES OF MEASUREMENT**

**Subject Aim:**

*This subject is intended to:*

1. Introduce measuring and estimating techniques of building elements and gives students an understanding of their importance in estimating quantities and costs of building work.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Examine and analyse the documentation used in procurement of building works.
2. Measure quantities for building work.

**Brief Syllabus Content:**

*Mensuration and The Surveyor*

The builder, surveyor and related professions. The role of the Quantity Surveyor, his evolution, current place and future direction.

*Bills of Quantities*

Quantitative Analysis of Building works for Tender - Builder’s Quantities - An introduction.

Advantages of Standardization of Measurement for Tender - S.M.M.’s.

The bill of quantities - types, functions and uses. The working up process to the bill of quantities.

*Measurement Techniques*

Organization and systems of taking off including subdivision of building elements, gross measurement, schedules and other preparatory documentation such as query lists.

Conventions used in recording of dimensions, including traditional dimension paper and the use of its columns, principles of description writing waste quantities and side notes standard abbreviations.

Mensuration commonly used in taking off particularly that for excavations, including formulae for regular figures and methods of measuring irregular figures, interpolation and extrapolation of ground levels, simple and weighted average of levels from grids, and computing volumes of earthwork. Centre lines and mean girths of walling and strip foundations.

Measurement examples of building structures according to the H.K.S.M.M.
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

Fundamental principles will be covered in lectures and topics are further developed through seminars and tutorials. Practical exercises will provide basic training in measurement skills.

Assessment strategy *(assessment of student performance resulting from learning tasks):*

The coursework mark will be based on the assignments (2 nos. of equal weighting).

Reading List:

Recommended:


Supplementary:


Subject Code BRE291
Level 2
Contact Hours Lect:21 Tut/Lab:21
Student Effort Hours 120

Assessment Method Coursework 40%
Examination 60%
Credit Value 3
Pre-requisites Nil
Co-requisites Nil
Exclusions Nil
Subject Leader/ Lecturer/Dept. W.K. Kong (BRE)

CONSTRUCTION TECHNOLOGY I

Subject Aim:

This subject is intended to:
1. Equip students with an understanding of scientific and engineering principles governing the construction of buildings.
2. Be aware of the range of building materials available for construction and gain an understanding of the key concepts determining classification, properties and applications.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Relate basic construction vocabulary and terminology of construction for various building elements/components,
2. Possess a knowledge of functional requirements of various building elements/components.
3. Give preliminary appraisal to the performances of various building elements/components with respect to their corresponding performance requirements.
4. Relate the inter-relationship among building elements/components.
5. Interpret and extract information from construction drawings.

Brief Syllabus Content:

Technology:
Introduction to the development of construction technology. System concept in modeling construction process.

Functional requirements, vocabulary and construction processes of various building elements: including excavation & foundations, walls, floors and roofs.

Functional requirements, vocabulary and construction processes of various building components: including stairs, non-load bearing walls, doors, windows suspended ceiling and finishes.

Structure:
Introduction to structural engineering concept and vocabulary. Introduction to forces and their effects on structures.

Simple flexural theories on beams and trusses.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Lectures, tutorials and laboratory constitute the delivery of the subject. Lectures aims at delivering the basic core and concepts and knowledge, which are to be discussed and consolidated through tutorials and laboratories.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Assessment of the subject will be in the form of written report, journal of site activities and drawing exercises and tutorial exercises on structures.

Written report aims at assessing students’ competence in relating and appraising functional requirements of building elements/components.

Journal of site activities helps students to relate concept and knowledge to actual works on site and relate the inter-relationship among building elements/components.

Tutorial exercises provide opportunities to students to apply structural principles in explaining simple structural behaviour and solving simple structural design problems.

The split between coursework and examinations will be 40/60.

**Reading List:**

**Recommended:**


**Supplementary:**

Subject Code: BRE2921  
Level: 2  
Contact Hours: LT:21 TU/LB:21  
Student Effort Hours: 120  
Assessment Method: Coursework 50% Examination 50%  
Credit Value: 3  
Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: BRE292/BRE205  
Subject Leader/Lecturer/Dept.: C.N. Fan (BRE)

**Subject Aim:**

This subject is intended to:

1. Provide a macroscopic view of organization and management principles as applied to the construction and real estate sectors.
2. Provide an understanding of project and property management and good business practice in project development, construction and property management process.
3. Develop selected management skills in practice.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Develop effective plans for monitoring of performance outputs throughout construction and property management process.
2. Discuss the managerial, ethical and social implications of construction situation.
3. Communicate effectively, including information collection presentation of analysis, and justification of recommended actions.
4. Utilize selected management techniques to solve managerial problems.

**Brief Syllabus Content:**

The manager and the manager’s role as a leader: define the nature of managerial work taking into account the impacts of construction and real estate business environment; motivation concepts; foundations of group behaviour; and introduction of leadership theories.

Managerial functions: concepts of organization structure and design of the variety organization structures of construction and real estate enterprises; foundations of planning, controlling, and communication and their importance for effective management of construction and real estate organizations.

Introduction to project management: characteristics of project; project manager; project management context; types of project organization structures; concepts of project planning and controlling of cost, time and quality performance of construction projects.

Introduction to property management: concept of corporate strategy in real estate management; stakeholders in the industry; an appreciation of property management process from acquisition, management to disposal.

Social responsibility and ethics: arguments for and against social responsibility as a business objective concept of professional ethics and ethical problems in construction and real estate sectors.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

The theories of management will be introduced in lectures. The Management Laboratory will be used for the application of the principles to management problems through case studies and management games. Discussion will be facilitated in tutorials by small group studies which providing opportunities for students to deliver their discussion results and thinking. Lectures, seminars, laboratory as well as tutorials will form a basic skeleton for learning management subject in year one.

**Assessment strategy (assessment of student performance resulting from learning tasks):**

Examination and coursework will constitute 50% and 50% of the overall mark for the subject respectively. Coursework will be set out to assess the understanding of the students on their subject during the period of teaching and learning.

**Reading List:**

**Recommended:**

Subject Code: BRE294
Level: 2
Contact Hours: Lect: 42 LB/TU: 42
Student Effort: 240

Assessment Method:
- Coursework 50%
- Examination 50%

Credit Value: 6
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: W.K. Kong (BRE) / J. Hao (BRE)

### Subject Aim:

This subject is intended to:

1. Equip students with an understanding of scientific and engineering principles governing the construction of buildings.
2. Aware of the range of building materials available for construction and gain an understanding of the key concepts determining classification, properties and applications.
3. Encourage an appreciation of the structure of buildings.
4. Develop concepts of structural action, leading to an ability to model, analyse and design common elements and structural frames by understanding simple structural framing.
5. Explore common modes of failure of building elements in laboratory sessions.

### Learning Outcomes:

Students will demonstrate their ability to:-

1. Use and understand the basic vocabulary and terminology of construction
2. Prepare real drawings, sketch and use computer-aided-drawing as a means of communicating information about buildings.
3. Appreciate the function of various building elements, their inter-relationship with each other.
4. Understand and appreciate the basic structure of buildings.
5. Employ mathematical modeling to explain the behaviour of building materials and structures.
6. Apply the concepts of structural mechanics to solve structural problems involving beams, columns and statically determinate truss.
7. Design simple structural elements to withstand these forces in their respective loading conditions.
8. Employ structural, mechanical and mathematical principles to design simple structure.
9. Recognize the failure modes and characteristics of simple structural elements.

### Brief Syllabus Content:

The construction/building industry: the changing nature of the design and construction processes and roles and the effects on engineering-technology and professional responsibilities.

Building vocabulary.

Types of simple foundation and construction methods.

An introduction to the main structural forms for the superstructure and their behaviour: framed, crosswall, boxform, corewall, large panel and surface structure.


Structural engineering concepts and qualitative appreciation of structural behaviour, loading, stress and strain, structural statics and dynamics, equilibrium and elasticity of materials, simple bending and shear concepts.

Drawing and Sketching Skills.

An introduction to the various structural forms, resistance to load, definition of terms, and, factors of safety.

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Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Brief Syllabus Content:**

Point and distributed static loading, (quasi-static) wind loading, load transfer in common building structures of various forms.

Computation of internal forces of statically determinate truss using the Method of Joints and Method of Section

Reaction of structural materials to imposed loads (with induced stresses and deformation).

Simple beam flexural theory, computation of bending stresses, shearing force and bending moment distribution, deformation and deflection of beams, sizing of simple reinforced concrete and steel beams to current codes.

Simple buckling theory of columns, effective length and slenderness ratio in relation to fixity conditions, combined stresses as subjected to eccentric axial load, sizing of simple reinforced concrete and steel columns to current British Standard.

Computation and design of simple bolted and welded steelwork connections.

**Experimental work:**

Materials: 4 experiments each of 2 hours duration from the following list.
1. Tests on aggregates: grading, organic matter content, and silt content.
2. Effects of constituents ratio and admixtures on workability and compressive strength of concrete.
3. Electrochemical corrosion of ferrous metal.
5. Identification of plastic materials used in building.
6. Paint tests.
7. Ignitability of fire propagation index of building materials.

Structure: 3 experiments each of 1 hour duration from the following list.
1. Statically determinate truss test.
2. Beam bending test.
3. Column buckling test.

**Learning and Teaching Approach:**

Teaching periods will adopt a wide range of different methods, for example: lectures, tutorials, practical and laboratory work in Technology Laboratory and Industrial Training Centre, group and individual work; student presentations, and site visits. Tutorials are to include problem-solving exercises where applicable
Wherever it is applicable, safety precautions and measures during the construction will be emphasized.

**Assessment:**

Examination and coursework will constitute 50% and 50% of the overall marks for the subject respectively.
The coursework mark will be based on the mid-term test, assignments, seminar discussions, laboratory and site visit reports.

**Reading List:**

**Recommended:**


**Supplementary:**


Structural Use of Steelwork in Building - BS 5950: Part I:2000. British Standards Institution,

Steelwork Design Guide to BS 5950: Parts 1 and 2
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>AMA290</th>
<th>ENGINEERING MATHEMATICS</th>
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<tbody>
<tr>
<td>Level</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sem/Tut:21</td>
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<tr>
<td>Student Effort Hours</td>
<td>120</td>
<td></td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Examination 70%</td>
<td>Coursework 30%</td>
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<tr>
<td>Credit Value</td>
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<td></td>
</tr>
<tr>
<td>Pre-requisites</td>
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<td></td>
</tr>
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<td>Co-requisites</td>
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<td></td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>Dr. W.K. Chan (AMA)</td>
<td></td>
</tr>
</tbody>
</table>

**Subject Aim:**

The subject is intended to:

1. Emphasize the mathematics concepts, principles of numerical analysis and their applications to the construction industry. It gives students a mathematical background within the context of its application to engineering problems.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Interpret, understand and prepare the data which they will be required to manipulate for construction problems.
2. Understand the application of analytical calculations.
3. Apply quantitative techniques to problem solving in building design, construction and management.

**Syllabus Content:**

*Linear Algebra:* Basic operations of vectors, matrices and determinants; Systems of linear equations; General properties of solutions; Elimination method; Ill conditioned systems; Eigenvalues and eigenvectors; Applications.

*Applied Calculus:* Functions of several variables; Partial derivatives; Maxima, minima and saddle point; Lagrange multiplier; Application to error estimates.

*Linear Programming:* Formulations; Graphical solution; Simplex method; Parametric modelling; Project Scheduling by PERT/CPM.

**Learning and Teaching Approach:**

The method of learning will be composed of formal lectures and tutorials. The lecturer will present the study topics in the lectures. In tutorial class, the work will focus on problem solving based on examination type questions and practical examples.

**Assessment:**

Examination and coursework will constitute the 70% and 30% of the overall marks of the subject respectively. The coursework mark will be based on the assignments and seminar discussions.

**Reading List:**

*Recommended:*

*Supplementary:*
<table>
<thead>
<tr>
<th>Subject Code</th>
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<td>Level</td>
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<tr>
<td>Contact Hours</td>
<td>Interactive Lecture, Experiential Learning and Role Play</td>
</tr>
<tr>
<td>Student Effort Hours</td>
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</tr>
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<td>Assessment Method</td>
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<td>Nil</td>
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<td>Nil</td>
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<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>(APSS)</td>
</tr>
</tbody>
</table>

### Subject Aim:

*The subject is intended to:*

The objectives of this subject are to enable students to initiate a Process of self-understanding and self-awareness, and to develop The interpersonal communication skills essential to human service practitioners.

### Learning Outcomes:

*Students will demonstrate their ability to:*

1. develop understanding and be aware of their personal abilities, feelings, values and attitudes related to the roles and practice of human service practitioners;
2. develop a greater self-awareness and understanding of oneself;
3. understand the core conditions, and develop skills to establish relationships with the service-users and co-workers in the workplace;
4. acquire the basic understanding and practice skills in interpersonal communication.

### Syllabus Content:

**Experiential Learning:**
As a contrast to the didactic learning approach used in lecturers, students will learn from their experience through participation and interaction in small group.

**Process and Pattern of Human Communication:**
To understand the elements of communication process and enhance sensitivity in observing and using verbal and non-verbal communication.

**Value Clarification:**
By drawing upon students’ own life and work experiences, they can understand better their own value stances and personal feelings. In this way, students are likely to be in a better position to understand the persons with whom they are working.

**Self-understanding:**
To initiate a process of self-exploration by enabling students to reflect upon their life experience, to assess their own strengths and weaknesses, and to develop greater self-awareness.

**Interpersonal Communication Skills:**
To understand and acquire the basic skills of communication, including effective attending behaviour, listening and questioning techniques, encouragement, paraphrasing, reflection of feelings, summarization and appropriate use of self.
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

1. Small group approach: This subject uses the small-group learning method in order to facilitate communication, students' participation and interaction. Each group will be round 20 students.
2. Experiential Learning: simulation exercises, role plays, discussion and mini-lectures will be used in teaching and learning.
3. Use of audio-visual facilities: This subject will be held in classrooms with audio-visual equipments so that students can review their own performance and that of their classmates after video-taping of role-play exercises.
4. Home Assignments: Apart from learning in class, there are also take home exercises for certain topics.

Assessment strategy (assessment of student performance resulting from learning tasks):

Students will be required to participate actively and demonstrate competence in interpersonal communication skills through case discussion and role play exercises. They will be expected to write an autobiography to reflect on their self-understanding, and make an in-depth self-reflection by writing an essay. Peer and self-assessment will be made at the end this subject. Continuous assessment is adopted in this subject:

<table>
<thead>
<tr>
<th>Component</th>
<th>Weightage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Participation in experiential learning activities and performance in role play exercises</td>
<td>50%</td>
</tr>
<tr>
<td>Reflective journal and essay questions</td>
<td>40%</td>
</tr>
<tr>
<td>Peer and self-assessment</td>
<td>10%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

Reading List:

Essential

Leung, Z., Ng, K., Ng., Y.M. et al. (2001) “認識自我與溝通技巧” 網上教材
http://www.acad.polyu.edu.hk/~sswebet
香港理工大學應用社科系。


胡新和、唐熱鳳譯 (1966)。溝通技巧。香港：商務印書館。

黃惠惠著 (1999)。自我與人際溝通。台北：張老師出版社。

李燕、李蒲群譯 (1998)。人際溝通。台北：揚智文化。
Subject Code: CSE254

GEOLOGY FOR ENGINEERS

Level: 2

Contact Hours
- Lect: 1.50 hrs/wk
- Tutorial: 0.5 hr/wk
- Lab: 1 hr/wk

Student Effort Hours: 120

Assessment Method
- Examination 70%
- Coursework 30%

Credit Value: 3

Pre-requisites: Nil

Co-requisites: Nil

Exclusions: Nil

Subject Leader/Dept: C.M. Lee (CSE)

Subject Aim:
This subject is intended to:

1. Provide students with a basic knowledge of geology and Engineering geology and their applications to Civil Engineering.
2. The course is an essential preliminary to studies in Soil Mechanics and Foundation Engineering later in the course.

Learning Outcomes:

Students will demonstrate their ability to:

1. Understand and classify the different nature and properties of different types of rocks.
2. Apply the knowledge to foundation designs and construction.
3. Interpretate the test results of the soil samplings.

The Earth (1 week)
Internal structure-plate tectonics - geological time scale.

Geomorphology (2 weeks)
Weathering: mechanical and chemical - the work of sunlight, wind, rain, ice and water in shaping the earth's surface.

Minerals (2 weeks)
Study of physical properties of common minerals and their recognition from hand specimens.

Rocks (2 weeks)
Study of composition, appearance, origin of common rocks and their recognition in hand specimens.

Structural Geology (1 week)
Study of commonly occurring structures seen in the earth's crust - Folding, Faulting, Jointing, Dips, Strikes, Bedding, Unconformities.

Geology of Hong Kong (1.5 weeks)
Study of the rocks and structure of Hong Kong - Field Studies. Comparison of the geology of Hong Kong to that of South China.

Site Investigations (2 weeks)
Methods of investigation - trial pits, probing, boreholes, remote sensing. Sampling - disturbed and undisturbed cores. In-situ testing. Map reading and mapping.

Engineering Geology (2.5 weeks)
Geological applications to tunnels, transportation links, dams, reservoirs, catchments, coastline protection, slopes and foundation.
**Learning and Teaching Approach:**

Fundamental knowledge will be covered in lectures. Laboratory work and field studies will help students appreciate the basic principles and familiarize themselves with basic instruments.

**Assessment:**

**Coursework:** Two laboratory reports, one field study report and ten tutorial problem sheets.

**Assessment:** 70% examination + 30% coursework

**Reading List:**

**Recommended:**

**Essential Textbooks**

Geotechnology III   Study Guide to Geology Volumes, 1, 2, 3.

Geotechnology IV   Study Guide to Engineering geology Volumes 1, 2.

**Reference Textbooks**

Blyth & De Freitas (Edward Arnold), A Geology for Engineers 7th ed., 1984 - ELBS.
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>CSE290</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td></td>
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</tbody>
</table>
| Contact Hours | Lect: 21  
Tut/Lab: 14  
Field Work: 7 |
| Student Effort | 120 |
| Hours       |        |
| Assessment | Examination 70%  
Coursework 30% |
| Method      |        |
| Credit Value | 3 |
| Pre-requisites | Nil |
| Co-requisites | Nil |
| Exclusions | Nil |
| Subject Leader/  
Lecturer/Dept. | C.M. Lee (CSE) |

**Subject Aim:**

This subject is intended to:

1. Provide students with instruction on the fundamentals of geotechnology.
2. Provide an essential background for studies in soil mechanics, rock mechanics, foundation engineering and geotechnical designs.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Understand and classify the different nature and properties of different types of rocks.
2. Understand basic soil and rock mechanics.
3. Apply the knowledge to foundation designs and construction.
4. Interpret the test results of the soil samplings.

**Syllabus Content:**

**Mineralogy and Petrology**


**Surface processes and weathering**

Weathering of rock, erosion and deposition; hydrological cycle (River, Marine, Wind, Glacial).

**Structural geology**

Fold, Fault and joints, stereographic projection of joint; map reading and mapping, section of geological structures.

**Site investigation**

Plan for site investigation; direct and indirect methods for site investigation and sampling, logging of boreholes in situ test (e.g. SPT, CPT, PMT, DMT, DMT, VST); interpretation of test results. Methods of geophysical exploration.

**Geology for engineering**

Geological application to tunnels. Transportation links, dams, reservoirs and catchments, coastline protection, slope and foundation.

**Soil mechanics**

Soil classification, 3 phase model, mass –volume relationship, void ratio, porosity, moisture content, specific gravity, unit weight, degree of saturation, soil consistency and Atterberg limits; soil hydraulics; basic concept of shear strength.

**Rock Mechanics**

Index properties of rock for engineering, classification of rock masses; rock strength and failure criteria; rock slope stability.

**Laboratory and Fieldwork**

Identification of common minerals and rocks. Field and site visits to illustrate course topics, Mapping.
**Learning and Teaching Approach:**

Teaching is based on lectures to be supported by laboratory and fieldwork to identify common rocks. Field and site visits to illustrate course topics.

**Assessment:**

70% examination + 30% coursework.

**Reading List:**

**Recommended:**

- GEO, *Guide to Rock and Soil Descriptions*, GeoGuide 3, GCO, Civil Engineering Services Department, Hong Kong, 1988
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>IC202</th>
<th>Work-Integrated Education (in Summer Semester)</th>
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<tbody>
<tr>
<td>Level</td>
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<td>Subject Aim:</td>
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<tr>
<td>Contact Hours</td>
<td>4 weeks</td>
<td>This subject is intended to:</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td></td>
<td>1. As a major provider of professional education in real estate and construction, the Department provides the industrial enhancement of the intellectual as well as the holistic development of building engineering students.</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>C.A. 100%</td>
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<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
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<td>Co-requisites</td>
<td>Nil</td>
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<tr>
<td>Exclusions</td>
<td>Nil</td>
<td></td>
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<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>Ir. Albert Kwok (IC)</td>
<td></td>
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</tbody>
</table>

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. To acquire on-site technical skills
2. To identify and solve problems related to construction practice
3. To communicate effectively
4. To contribute as a team member and lead effectively

**Syllabus Content/Learning and Teaching Approach:**

The construction project will be a real site project administered and constructed by the students under the supervision of IC staff. The scope of work will in general involve miscellaneous renovation works and minor structures construction in some school improvement projects. By participating in this module, students will be introduced with the general practices and the roles of the clients, their representatives and the contractors in running a construction project in different stages. Apart from utilizing the construction technology learnt from lectures and basic construction practices training, this construction project will be introduced to students with emphasis placed on project planning, management and construction safety throughout the project.

Students will take different roles as in a small contractor company undertaking a construction project and will be responsible for completion of the designated construction works according to the specifications and planned schedule. They will be able to experience in: project planning, materials pricing and ordering, site layout, plant mobilization, temporary works design and construction methods, construction safety management, co-ordination, quantity and quality control, communication, programming, progress records etc.

**Assessment:**

The Centre will adopt the following assessment methods for the WIE elements in all full-time undergraduate degree programmes except for the BEM programme. The assessment methods will include two components: (1) a reflective journal by the student(s), and (2) a report by the employer. For sandwich students, a log book is also required, which is essential for them to fulfill the requirement of the professional institutions.

Students will be required to document their workplace learning experience in reflective journals, which will be assessed in conjunction with an assessment report by the employer to see whether the WIE learning outcomes have been achieved. The Department may form an interview panel when necessary to assess whether students have achieved the intended learning outcomes.
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<tr>
<th>Subject Code</th>
<th>IC279</th>
<th>Industrial Training (in Summer Semester)</th>
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<td>Level</td>
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</tr>
<tr>
<td>Contact Hours</td>
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<td>Student Effort Hours</td>
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<tr>
<td>Assessment Method</td>
<td>C.A. 100%</td>
<td>Subject Aim:</td>
</tr>
<tr>
<td>Credit Value</td>
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<td>This subject is intended to:</td>
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<tr>
<td>Pre-requisites</td>
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<tr>
<td>Co-requisites</td>
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<tr>
<td>Exclusions</td>
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<td>Ir. Albert Kwok (IC)</td>
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<tr>
<td>Lecturer/Dept.</td>
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</tr>
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</table>

**Subject Aim:**

This subject is intended to:

**Learning Outcomes:**

Students will demonstrate their ability to:

**Syllabus Content/Learning and Teaching Approach:**

The construction project will be a real site project administered and constructed by the students under the supervision of IC staff. The scope of work will in general involve miscellaneous renovation works and minor structures construction in some school improvement projects. By participating in this module, students will be introduced with the general practices and the roles of the clients, their representatives and the contractors in running a construction project in different stages. Apart from utilizing the construction technology learnt from lectures and basic construction practices training, this construction project will be introduced to students with emphasis placed on project planning, management and construction safety throughout the project.

Students will take different roles as in a small contractor company undertaking a construction project and will be responsible for completion of the designated construction works according to the specifications and planned schedule. They will be able to experience in: project planning, materials pricing and ordering, site layout, plant mobilization, temporary works design and construction methods, construction safety management, coordination, quantity and quality control, communication, programming, progress records etc.
Subject Code  LSGI2961
Level  2
Contact Hours  Lect:28  Tut:14
Student Effort Hours  120
Assessment Method  Examination 60%  Coursework 40%
Credit Value  3
Pre-requisites  Nil  
Co-requisites  Nil  
Exclusions  Nil  
Subject Leader/ Lecturer/Dept.  Steve Lam (LSGI)

**ENGINEERING SURVEYING**

**Subject Aim:**

This subject is intended to:

1. Provide students with elementary theory and practice of control surveys, detail mapping, setting-out of different structures and presentation of survey data in engineering projects, and to familiarise students with contemporary surveying developments.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Understand the principles and objectives of measurement of building and land.
2. Apply the basic surveying operation and instrument.
3. Demonstrate the accurate setting out of buildings and related environs within agreed tolerances.

**Syllabus Content:**

*Fundamentals of Surveying*

*Distance Measurement*

*Angular Measurement*

*Vertical Control Survey*

*Horizontal Control Network*
Classification, standards of accuracy, and general specifications for horizontal control surveys. Triangulation. Trilateration, and traverse. Design criteria, monumentation, instrumentation, observation procedures and data analysis.

*Detail Surveying and Mapping*
Syllabus Content: (Cont’d)

Setting-Out of Structures for Construction

Introduction to Advanced Surveying Technology

Learning and Teaching Approach:

This subject is taught in the form of normal lectures which is supported with suitable tutorials and field practicals in the appropriate areas.

Hand-outs are delivered to students for some of the subjects areas. Students are instructed to consult suitable chapters of texts in due course. Students are encouraged to take their own notes in lecture session. Any problems encountered will be solved in the practical/tutorial sessions or students may approach the lecturer directly.

Instructions, introductions and field booking sheets/forms are given to students prior to field practicals. Students may prepare for their field works in advance. Tutorial/practicals are marked and returned to students. These will make up the mark for the continued assessments for the subject.

Assessment:

60% examination + 40% coursework.

Reading List:

Recommended:

Bannister and Raymond (1994) Solving Problems in Surveying, Longman
Blachut, Chrzanowski and Saastamoinen (1979) Urban Surveying & Mapping, Springer-Verlag
Clendinning and Olive (1969) Principles and Uses of Surveying Instruments, Blackie
Uren and Price (1994) Surveying for Engineers, MacMillan
### Subject Code
LSGI297

### Level
2

### Contact Hours
Lect: 21
Sem/Tut: 21

### Student Effort Hours
120

### Assessment Method
Examination 60%
Coursework 40%

### Credit Value
3

### Pre-requisites
Nil

### Co-requisites
Nil

### Exclusions
Nil

### Subject Leader/Lecturer/Dept.
LSGI

#### Subject Aim:

This subject is intended to:

This subject aims to introduce the concept and practical skills of land surveying in building construction projects.

#### Learning Outcomes:

Students will demonstrate their ability to:

1. the modern concept of land surveying as related to construction industry.
2. the practical skill to set out building structures, curves, earthworks, and drainage works and to be familiar with methods of controlling the vertical alignment of buildings.
3. an ability to use the modern surveying equipment relevant to the construction industry.

#### Syllabus Content:

**Co-ordinate System**
Plane rectangular co-ordinates, computation of bearings and distance using co-ordinates.

**Linear Measurement**

**Angular Measurement**
The theodolite (optical, mechanical and electronic), horizontal and vertical angles, methods of reading, booking and adjustment. Precision of measurements. Methods of checking adjustment of instruments. Traverse observation, computation and adjustment.

**Spirit Levelling**
Types of instruments including laser and staves, methods of booking and adjustment. Two peg test of instrument adjustment. Precision of measurements.

**Areas and Volumes**
Simple measurement.

**Setting Out**
Setting out buildings by elementary methods and by theodolite and level.

Setting out simple curves by deflection distance and deflection angles and co-ordinates.

Setting out simple earthworks involving both cut and fill. Vertical alignment using plumb bobs and optical plummets.

The use of lasers for alignment. Setting out simple drainage.
**Learning and Teaching Approach:**

This subject occurs only in the second term of the first year. It confines itself to the requirement of a development site, building services and to the infrastructure of the site.

Concept and knowledge of land surveying related to building works will be covered by lectures. Fieldwork will allow students to develop practical skill in the use of modern surveying equipment to set out building structures.

**Assessment:**

Examination and coursework will constitute the 60% and 40% of the overall marks of the subject respectively. The coursework mark will be based on the fieldwork assignments and a phase test.

**Textbook:**


**Reading List:**


**Journals:**

**Level 3 Subjects:**

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<thead>
<tr>
<th>Course Code</th>
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<td>Structure II</td>
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<tr>
<td>BRE 315</td>
<td>Property Valuation</td>
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<tr>
<td>BRE 319</td>
<td>Property Investment and Finance</td>
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<td>BRE 324</td>
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<td>BRE 326</td>
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<td>BRE 329</td>
<td>Construction Contract Law</td>
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<tr>
<td>BRE 3311</td>
<td>Integrated Project (Engineering)</td>
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<td>BRE 3312</td>
<td>Integrated Project (Surveying)</td>
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<td>Development Control Law</td>
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<td>BRE 337</td>
<td>Property Law</td>
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<td>BRE 341</td>
<td>Property Management I</td>
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<td>BRE 345</td>
<td>Measurement, Documentation &amp; Estimating</td>
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<td>BRE 346</td>
<td>Integrated Project IIA</td>
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<td>BRE 347</td>
<td>Urban &amp; Construction Economics</td>
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<td>BRE 348</td>
<td>Integrated Project II</td>
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<td>BRE 349</td>
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<td>BRE 350</td>
<td>Project Management Procurement</td>
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<td>BRE 351</td>
<td>Contract Administration</td>
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<td>Construction Management</td>
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<td>Project and Construction Management</td>
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<td>BRE 391</td>
<td>Construction Technology II</td>
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<td>BRE 3931</td>
<td>Temporary Work Design</td>
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<td>BRE 395</td>
<td>Building Services</td>
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<td>BSE 332</td>
<td>Fire Services</td>
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<td>ELC 3401</td>
<td>English in the Workplace (EW)</td>
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<td>IC 301</td>
<td>Industrial Safety I</td>
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<td>Industrial Safety II</td>
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| Contact Hours | Lect:21  
TU/Lab/Sem:21 |
| Student Effort Hours | 120 |
| Assessment Method | Coursework 50%  
Examination 50% |
| Credit Value | 3      |
| Pre-requisites | AMA290 & BRE204  
or equivalent |
| Co-requisites | Nil    |
| Exclusions | Nil    |
| Subject Leader/ Lecturer/Dept. | C.H. Yam (BRE)  
W.F. Tsang (BRE) |

**Subject Aim:**

*This subject is intended to:*

1. Consolidate the knowledge gained in Structure I and to extend this knowledge to include structural principles as related to design/construction of structural elements in high-rise building. At the end of this subject, the student is expected to be able to design building structural elements and appreciate the design of temporary steelworks.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Recognize load paths in typical multi-storey framed building structures and to compute design loads with due considerations given to a combination of live and dead loads, load and material safety factors.
2. Appreciate the structural principles and their applications to the design of permanent building structures (according to BS 5950 for structural steelwork and BS 8110 for reinforced concrete).
3. Design permanent building structures, including connections in the case of steelwork, with due consideration of overall safety and serviceability requirements.
4. Relate the structural principles and their applications to load and stability analysis of erecting temporary steelworks, in particular cranes of various forms.

**Brief Syllabus Content:**

**Design Concept**

Limit states design: Ultimate limit states and serviceability limit states, load combination.

*Structural principles applied to the use of reinforced concrete design*

Reinforced concrete design to BS8110: singly and doubly reinforced concrete beams, shear reinforcement, simply supported slabs, one-way continuous slab, compression members under axial load and moment, average and local bond stresses.

*Structural principles applied to the use of structural steel design*

Structural steel design to BS5950. Tension members, beams (laterally restrained and unrestrained), columns, beam-columns, welded and bolted connections.

**Temporary works engineering**

Codes, Standards and Regulations related to the design and erection of temporary steelworks.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
### Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

**Interactive Lectures** will enable students to:
1. design simple reinforced concrete beams, slabs and columns to BS8110;
2. design simple structural steel beams, columns, beam-columns, welded and bolted connections to BS5950, and
3. appreciate the design and the erection of temporary steelworks.

**Tutorial** will enable students to:
1. consolidate the structural design concept through design problem-solving assignments and discussions.

**Laboratory** will enable students to:
1. identify through a demonstration test the structural behaviour of a full-scale simply supported steel beam subjected to bending.

### Assessment strategy (assessment of student performance resulting from learning tasks):

Assessment comprises of five parts:
1. Problem-solving assignment
2. Laboratory report
3. Design assignment
4. Mid-term test
5. Final examination

These components are designed to assess students’ ability to design simple reinforced concrete elements and structural steel elements and appreciate the design and the erection of temporary steelworks.

- Coursework: 50%
- Final Exam.: 50%

### Reading List:

**Recommended:**

**Supplementary:**
- *Structural Use of Concrete - BS 8110: Part 1*, 1997 British Standards Institution.
- *Steelwork Design Guide to BS 5950: Parts 1 and 2*.
- Construction Sites (Safety) Regulation, Cap. 59.
- Factories and Industrial Undertaking Ordinance, Section 6A & 6B – General Duties.
- Factories and Industrial Undertaking (lifting Appliance and lifting Gear) Regulation.
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<td>Coursework 50% Examination 50%</td>
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<td>Co-requisites</td>
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<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>K.F. Man (BRE)</td>
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</table>

**PROPERTY VALUATION**

**Subject Aim:**

*This subject is intended to:*

1. Understand the nature of the market and property values.
2. Examine the theories of current valuation methods.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Identify and analyse the various frameworks, including physical, economic and legal, that affect property value.
2. Make comparisons between the choices of the various valuation approaches and methods in the valuation of different types of property for different types of value estimate.
3. Draw on current valuation methods to solve valuation problems.
4. Use of valuation in the management and decision making process in real estate development, investment and management.

**Brief Syllabus Content:**

Value and valuation; concepts; economic principles; valuation tables; role of valuer.

Real property market data sources: information; market trends and cycles.

Valuation process; valuation report writing.

Methods of valuation; comparative, investment, residual, cash flow; cost and profits methods.

Valuation of freehold and leasehold interests; capital and rental values; theories of yield; deferred and varying incomes; extension and renewal of leases.


*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

Lectures will be used to provide students with a good understanding of the basic valuation concepts and theories, and will be supplemented with self-learning packages. Wherever possible, case studies will be used to illustrate how principles can be applied into practice. Tutorials will be used by the lecturer and students to discuss valuation problems and assignments while seminars provide suitable forums for presentation by the students. Students are also required to prepare a ‘real life’ valuation report. Outside speakers may be invited to give talks on current valuation practice in Hong Kong as well as other countries.

**Assessment strategy (assessment of student performance resulting from learning tasks):**

Students will be assessed through both coursework and examination.

Coursework will consist of valuation report and problem solving assignments in the form of quiz. Both examination and coursework assess learning outcome 1 to 4.

**Reading List:**

**Recommended:**


Li Ling-hin, (1999) *Property Valuation in Hong Kong: Theories and Legal Application*, PACE


**Supplementary:**


Davidson, A.W., (1989) *Parry’s Valuation and Investment Tables*, Estate Gazette
**PROPERTY INVESTMENT AND FINANCE**

**Subject Aim:**

This subject is intended to:

1. Enable students to understand financial theories and the analytical techniques related to investment decisions.
2. Foster students’ awareness and understanding of property finance and the use of real-estate related financial instruments in today’s context.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Interpret and evaluate the financial strength of real estate companies.
2. Use financial theories to assess a landed property as an investment asset with regard to its risk and return.
3. Draw upon the implications of financial planning on property investment decisions.
4. Appraise alternative investments within the context of Hong Kong, including both direct and indirect real estate investments and other financial securities.
5. Possess skills to identify, analyse and solve problems on contemporary issues.

**Brief Syllabus Content:**

*Property Finance*
An overview of capital markets and the different financial systems.
An introduction of financial accounting including principal accounting concepts, basic accounting process, financial statements analysis and interpretation, and ratio analysis.
Financial control and budgeting for Building Management
Capital structure and tax implications.

*Property Investment*
Investment concepts and principles; investment vehicles; comparison between property investment and financial investment vehicles.
Portfolio analysis, diversification and capital market theory, risk and return in property and stock investments.
Market efficiency hypothesis and market performance measurement.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The principles of property finance and investment will be introduced in the lectures from which students can get an understanding of the financial theories and their applications to the landed property in Hong Kong. Presentations and group discussions will be conducted to create an environment that encourages active learning, consolidate understanding and enable application of theories. Wherever possible, guest speakers will be invited to discuss various topical issues with real examples.

Assessment strategy (assessment of student performance resulting from learning tasks):

Assessment will be based on 50% coursework and 50% examination. The coursework will comprise group presentations of selected articles and individual works of essay writing on topics related to the contemporary issues of the Hong Kong property and financial market. The group presentations will assess the learning outcomes of 1, 2 and 3, and the individual works will assess the learning outcomes of 4 and 5. The examination will assess all the 5 learning outcomes.

Reading List:


Supplementary:

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<td>Assessment Method</td>
<td>Coursework 50% Examination 50%</td>
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<td>Pre-requisites</td>
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<td>Subject Leader/ Lecturer/Dept.</td>
<td>S.W. Fong (BRE) Y.H. Chiang (BRE)</td>
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</table>

**ENGINEERING ECONOMICS**

**Subject Aim:**

Engineers are members of one of the principal ‘spending professions’ in the sense that they carry responsibility for the design and production of infrastructure and the built environment. Economic analysis as applied to engineering and construction is concerned with pursuing the better use of resources, and providing the analytical support for decisions about achieving value for money and choosing between competing alternatives.

*This subject is intended to:*

Equip students with theories and analytical skills necessary to make well informed decisions.

**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Ability to conduct project appraisal across a combination of project objectives, including, economical, technical, social and environmental.
2. Ability to evaluate business opportunities under given constraints, competing objectives and allocated resources.
3. Ability to appraise projects critically in order to achieve value for money.
4. Ability to work collaboratively with other team members.

**Brief Syllabus Content:**


*Principles of Project Appraisal:* Time value of money. Net present value and internal rate of return. Project investment appraisal and feasibility studies.


*Budgeting and Cost Control:* Cumulative expenditure and revenue curves. Design and production cost control.

*Cost and Break-even Analysis:* Fixed costs, variable costs. Working capital. Cost control curves. Calculation of break-even point.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Lectures are used to present theories and principles of different economic analyses. Case-based learning and tutorials are used to give the students the opportunity to identify and diagnose business problems accurately and effectively across a wide range of engineering or construction domains.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Examination and coursework will constitute 50% and 50% of the overall mark for the subject respectively. The coursework mark will be based on case projects, seminar presentations and multiple choice test.

**Reading List:**

**Recommended:**

*Essential Texts*


**Reference**


MAINTENANCE TECHNOLOGY & MANAGEMENT

Subject Aim:

This subject is intended to:

1. Strengthen students’ building technology knowledge with particular focus on the repair and maintenance disciplines;
2. Give students a basic knowledge on how to manage the maintenance works efficiently and effectively.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Identify the causes of common defects and material deterioration.
2. Diagnose building defects and propose remedial actions.
3. Monitor and supervise the quality of maintenance work.
4. Understand the principles and execution of maintenance planning and management.
5. Evaluate maintenance needs and execute the work effectively.

Brief Syllabus Content:

Maintenance Technology:
Deterioration of common building materials – mechanisms and protection
Typical deteriorating factors for reinforced concrete in Hong Kong
Common defects of building elements
Health and environmental issues in building maintenance
Testing and diagnosis of building defects, remedies and prevention

Maintenance Management & Planning:
Types of maintenance, classifications and selection criteria
Maintenance planning and scheduling: budgeting, resources allocation and timing of maintenance
Alternative methods on executing of maintenance works: direct labour and contract out
Contract procurement for maintenance works
Safety and environmental considerations for maintenance works
Relationship between design and maintenance; feedback on design
Life cycle costing concept on selection of alternatives

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Students will learn this subject through lectures and supplemented by tutorials. Laboratory works, conducted in the University’s IC and the departmental laboratory, will also be introduced in order to facilitate learning of building defects and evaluate repair methodology. Tutorials will be conducted in different formats in order to encourage active participation and learning of students, e.g. problem-solving exercises, case studies, presentations.
**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively.

One piece of coursework will be assigned to each group. The coursework will include a written report (80%) together with a presentation (20%).

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**Reading List:**

**Recommended:**


**Supplementary:**

CONSTRUCTION CONTRACT LAW

Subject Aim:

This subject is intended to:

1. Introduce aspects of law that have particular relevance to development and construction.
2. Provide a practical knowledge of modern development in construction contract law and application of laws and procedures relating to construction contracts and their administration.

Learning Outcomes:

Students will demonstrate their ability to:

1. Evaluate the general principles of development control law and apply them in contract administration;
2. Analyse the legal issues in the modern development of law in contract and tort;
3. Apply the legal principles to conduct construction contract administration and to evaluate construction contract claims.
4. Communicate effectively.
5. Possess the ability to engage in life-long learning on Construction Contract Law.

Brief Syllabus Content:

Development control: development process, statutory and non-statutory control.

Construction contracts: modern development of law in contract and tort; legal interpretation and application in construction contract; bankruptcy and insurance.

Legal basis for Standard form of contract: characteristics of various standard form of local and international building contracts and sub-contract.

Duties and responsibilities of the parties to the contract: implications of contract clauses; legal implication in the procedures for instructions, variations, payments and certification.

Construction claims: evaluation and presentation of claims; contractual and common law remedies; dispute resolution methods.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Lectures and tutorials will be run throughout the semester period. The lectures and tutorials will not only disseminate the relevant knowledge but also provide guidance for students to search materials for self-study. Tutorial projects will also be set requiring the student to evaluate and apply the relevant law principles and deduce solution for the cases and also to analyze, critically appraise and resolve administrative, organizational and managerial problems.

Key topics will be set for groups of 4-5 students to carry out some research and prepare for presentation and discussion in tutorial class in order to encourage peer group learning and to clarify any difficulties found in lecture and reading. The work also will be set on an individual basis and seek to enhance verbal and written communication skills.

In order to encourage divergent and innovative thinking, the project work will be set as an interactive project based on changing circumstances. This encourages legal analysis and application and also efficient data management. The work will be based on the issues introduced by the teaching but will reward evidence of further reading and private study.

Contact hours include individual or group project supervision. I.T. will be deployed to support teaching.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Students will be assessed by:

(i) examination, including problem analysis and essay type question, accounting for 70% (one end of semester written paper) and

(ii) through the medium of coursework, including presentation in class of project assignments, accounting for 30% (1 coursework assignment and 1 short written test)

**Reading List:**

**Recommended:**

**Supplementary:**
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<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>D.W.M. Chan (BRE) J.J.L. Hao (BRE)</td>
</tr>
</tbody>
</table>

**INTEGRATED PROJECT (Engineering)**

**Subject Aim:**

This subject is intended to:

1. Bring students attention to the vertical integration of the subject areas learned in Level 2 such as BRE294 (Construction Technology and Structure) together with the practical experience gained in Industrial Centre to the subject areas of Level 3, such as BRE391 (Construction Technology II) and BRE396 (Construction Management) while the inter-relation of the horizontal integration between subjects are also important in solving a problem-based project work.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Integrate and apply knowledge and skills acquired in individual subject areas on construction engineering design, technology, management, economics and legal aspects to the case of a particular project.
2. Achieve the practice of teamwork in a real-life project environment to excel for the common goal.
3. Communicate effectively technical information in a managerial role, including information collection, proper presentation of analysis and justification of recommended actions.

**Brief Syllabus Content:**

A construction and property related project scenario will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The integrated project requires students to make use of the knowledge and skills acquired in Level 2 subjects (e.g. Construction Technology and Structure) and Level 3 subjects (e.g. Construction Technology II and Construction Management) to tackle the tasks related to the management and technology aspects as assigned by the respective lecturers. The project will include an element of group effort and individual work assessment.

**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

The whole class is divided into groups of 4 or 5 students. Each group is to select a building construction site/project to form a common base for several given tasks. Briefing sessions via a ‘Project Guide’ will be conducted to familiarize students with the methodology and areas of consideration for each task. The tasks are to be performed in the given sequence and time frame. Supervision and consultation will be made available during the entire process. Mid-way through the project, an Interim Report is required from each group for assessment by the relevant supervisors. Towards the end of the Semester II, each group shall present their work in the form of a concise written report with full working details. A final assessment will then be made on overall group performance for this subject.

**Assessment strategy (assessment of student performance resulting from learning tasks):**

The assessment of the subject will be in the form continuous assessment. Students have to produce two written reports (Interim Report and Final Report) including written text, diagrams/drawings, photographs, design calculations, tables and charts necessary for explanation and illustration wherever appropriate. Also, supervisors will be assigned for each group, and in regular interval, they will be asked to report to their supervisors on the progress of work. Both aggregating grades and assigning grades are given to group effort and individual contribution in a group. This is to ensure that there will be no ‘non-performer’.
Typical assessment criteria include:

(a) Appropriate report structure
(b) Participation and contribution
(c) Relevant focus and depth
(d) Assumptions and information collection
(e) Analysis, synthesis and technical competence of construction methods
(f) Appropriateness of programme descriptions and durations
(g) Clarity and relevance of written report
(h) Logic of explanation
(i) Relevance and clarity of sketches
(j) Originality
(k) Comprehensive consideration of inter-relationships between site operations

Reading List:

No standard text is recommended, since students have to refer to various literature in order to achieve the requirements of the project.
INTEGRATED PROJECT (Surveying)

Subject Aim:

This subject is intended to:

1. Encourage critical investigation, analysis and synthesis in solving problems in the surveying professional context.
2. Provide an environment for the students to develop skills in identifying and solving problems related to the surveying profession and real estate industry and allow the integration of knowledge gained in separate subject areas.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Integrate and apply knowledge and skills gained from various subject areas on construction engineering design, technology, management, economics and legal aspects to the case of a particular project.
2. Develop teamwork spirit as an effective approach to tackling a project and solving problems related to the surveying profession and real estate industry in a professional context.
3. Communicate effectively technical information in a managerial role, including information collection, proper presentation of analysis and justification of recommended actions.

Brief Syllabus Content:

A construction and property related project scenario will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The integrated project requires students to make use of the knowledge and skills acquired in Level 2 subjects (e.g. Construction Technology and Structure, together with Legal Context of Construction and Real Estate) and Level 3 subjects (e.g. Construction Technology II and Construction Management) to tackle the tasks related to the management, technology and legal aspects as assigned by the respective lecturers. The project will include an element of group effort and individual work assessment.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The whole class is divided into groups of 4 or 5 students. Each group is to select a building construction site/project to form a common base for several given tasks. Briefing sessions via a ‘Project Guide’ will be conducted to familiarize students with the methodology and areas of consideration for each task. The tasks are to be performed in the given sequence and time frame. Supervision and consultation will be made available during the entire process. Mid-way through the project, an Interim Report is required from each group for assessment by the relevant supervisors. Towards the end of the Semester II, each group shall present their work in the form of a concise written report with full working details. A final assessment will then be made on overall group performance for this subject.

Assessment strategy (assessment of student performance resulting from learning tasks):

The subject will be assessed based on coursework only. Students have to produce two written reports (Interim Report and Final Report) covering written text, diagrams/drawings, photographs, design calculations, tables and charts necessary for explanation and illustration wherever appropriate. Also, supervisors will be assigned for each group, and in regular interval, they will be asked to report to their supervisors on the progress of work. Both aggregating grades and assigning grades are given to group effort and individual contribution in a group. This is to ensure that there will be no ‘non-performer’.
Typical assessment criteria include:

(a) Appropriate report structure  
(b) Participation and contribution  
(c) Relevant focus and depth  
(d) Assumptions and information collection  
(e) Analysis, synthesis and technical competence of construction methods  
(f) Appropriateness of programme descriptions and durations  
(g) Clarity and relevance of written report  
(h) Logic of explanation  
(i) Relevance and clarity of sketches  
(j) Originality  
(k) Comprehensive consideration of inter-relationships between site operations

Reading List:  
Construction Journals, Databases, Statistics and Subject Module Texts
DEVELOPMENT CONTROL LAW

Subject Code: BRE336
Level: 3
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method: Coursework 50% Examination 50%
Credit Value: 3

Pre-requisites: BRE206
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: K.K. Lo (BRE)

Subject Aim:

This subject is intended to:

1. Build up practical knowledge on property development control law and current measures imposed by government affecting the development and use of property.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Comprehend the importance of the planning, building law and other aspects of legislation together with other non-statutory requirements on properties for evaluation of impacts on property development and redevelopment.
2. Apply their learnt knowledge on the integrated approach to legal control of new development and existing properties in the course of development and re-development process.
3. Conduct a most appropriate planning on design and construction of property amongst other choices on the basis of latest legislative issues.
4. Analyse and interpret the liabilities of professionals in the course of property development and re-development.
5. Function on multi-disciplinary teams as capacity of discipline leader.
6. Communicate effectively with other players of development or re-development teams.

Brief Syllabus Content:

Planning Ordinance:
Planning law affecting property development; function of the Town Planning Board, the Appeal Board and Land Development Corporation; zoning plans and development control administration; enforcement, appeal and enquiries process.

Buildings Ordinance:
Development and building control through administrative measures, regulations and codes of practice; control and enforcement of illegal and dangerous structures; role of Authorized Person, Registered Structural Engineer and Registered Contractor.

Government Lease and Conditions:
Development conditions; control and enforcement; modification and renewal.

Professional Liabilities:
Professional licensing and liabilities; modern development in the law of contract and tort, post-construction liabilities and insurance.

Other Related Laws:
Environmental control laws; law relating to dilapidation and occupation of building; and Practice Notes for building professionals and registered contractors.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The basic concept of law and critical procedures related to development control will be explained in lectures. Tutorial and seminars will be arranged for discussion in specific topic set for the students in order to facilitate two-way communication and to understand the students’ difficulties and needs. Case study projects will be assigned to small group of 4-5 students to encourage students to take initiation to research and explore options, to tackle problem and to benefit from peer group learning. The project will emphasis on the application of knowledge and to understand the integration of the subject material with other subjects in a development project. Experience practitioners will be invited to deliver lectures and seminars for updated input on the current practice.

Assessment strategy (assessment of student performance resulting from learning tasks):

The coursework continuous assessment will account for 50% and the written examination will account for 50%. The marking will emphasis assessing on both the process and submitted product. Students are encouraged to explore options of property development within the constraint of development law through project work and tutorial assignments. Questions will be asked during presentation to ensure the students have achieved the learning outcomes.

Reading List:

Recommended:


Buildings and Lands Department (1991), *Building Control in Hong Kong*, HK Government Printer


Supplementary:

Practice Notes for Authorized Persons, Registered Structural Engineers and Registered Contractors, latest edition, Buildings Department


H.K. Government *Town Planning in Hong Kong*, HK Government Printer

Built Environment at the crossroads (1996) the 1996 Fourth World Congress of Building Officials, Hong Kong, WOBO, HK
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE337</th>
<th><strong>PROPERTY LAW</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>3</td>
<td><strong>Subject Aim:</strong></td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
<td><strong>This subject is intended to:</strong></td>
</tr>
<tr>
<td>Student Effort</td>
<td>120</td>
<td>1. Further develop and apply knowledge and reasoning skills;</td>
</tr>
<tr>
<td>Hours</td>
<td></td>
<td>2. Evaluate and apply property law to factual situations;</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 30% Examination 70%</td>
<td>3. Examine law relating to property transactions, land use control and compensation</td>
</tr>
<tr>
<td>Credit Value</td>
<td>3</td>
<td><strong>Learning Outcomes:</strong></td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>BRE206</td>
<td>Students will demonstrate their ability to:-</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
<td>1. Identify and evaluate the key concepts and principles of Hong Kong land law and conveyancing.</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
<td>2. Compare and contrast the different property concepts.</td>
</tr>
<tr>
<td>Subject Leader/</td>
<td></td>
<td>3. Apply knowledge and reasoning skills to solve legal problems relating to ownership and land use control.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5. Possess the ability to evaluate property law with reference to contemporary issues.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>6. Communicate effectively.</td>
</tr>
</tbody>
</table>

**Brief Syllabus Content:**

The meaning of Real Estate in Hong Kong. [Interests in land; the landholding system in Hong Kong; land transactions].

Acquisition, transfer and extinction of interests in land. [Vendor/purchaser transactions; title to land’ mortgages and charges; sale and purchase agreements; requisitions on title; assignments; stamp duty; registration].

The private control of land use. [Consent and non-consent schemes the government’s right to re-enter under the government lease; easements; land covenants].

Public control of land use. [Planning and building controls; land resumption]

Building Management Law.

Landlord and Tenant Law. [essentials of a lease; distinction between a lease and a licence; creation and form of leases; express and implied terms, especially rent and repair covenants; remedies for breach of covenant; termination of leases; security of tenure and assessment of rent.]

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

The sequence of learning in this module is organized around two themes, and three topics:

1. Acquisition, transfer and extinction of interests in land in Hong Kong.
2. The control of land use.

The topics are:

- Vendor/purchaser transactions.
- The relationship between owners and managers of multi-storey buildings
- The relationship of landlord and tenant.

The themes and topics are developed through problem-solving activities designed to develop the higher order cognitive skills of analysis, argument and critical judgment. Where appropriate, role-plays are used to develop skills and enhance awareness of the role of law in property decisions in Hong Kong.

Assessment strategy *(assessment of student performance resulting from learning tasks):*

Assessment is designed to contribute to learning, and to determine the extent to which a student has achieved the learning objectives in the following ways:

1. In-class test, comprising questions to test attainment of legal concepts.
2. A 2 hour examination comprising a combination of breadth and depth problems designed to assess knowledge, reasoning ability, and critical judgment.

Reading List:

**Recommended:**


**Supplementary:**

*Authorized Hong Kong Law Report and Digest*, Sweet & Maxwell

Government Publications

*Halsbury Laws of Hong Kong*, Butterworths

Hong Kong Cases, Butterworths
PROPERTY MANAGEMENT I

Subject Aim:

This subject is intended to:

1. Introduce to the students the principles and practice of property management.
2. Focus on the application of the principles to the property management services.
3. Give the students a basic knowledge for managing buildings in the private and public sectors.
4. Help them to develop management skills in practice.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Review the fundamentals of property management.
2. Identify the business and work environment in property management services in Hong Kong.
3. Apply the principles and practice necessary for efficient planning and administration of property management.
4. Synthesize their knowledge to solve problems in property management.

Brief Syllabus Content:

Managing Marketing of Property Management Services
An introduction to the nature of property management and the market for property management services. An analysis of existing services; types of buildings and estates; internal organization of property management business; marketing of property management services.

Managing Common Areas of Owner’s Property
Pre-management planning before take-over of premises: Organizational principles and establishment of a new management office; testing of building services; identifying defects of premises. Provision of services after take-over of premises: Staff management; financial management; security services; fire services installations; water and electricity supply; cleansing services; air-conditioning and so on. Environmental and conservation issues in property management: energy saving; control of illegal structures and estate modernization.

Managing Leased Property
Leasing and tenancy arrangements: Contractual and statutory lease conditions; tenancy renewals; tenant mix rent reviews; Landlord and Tenant (Consolidation) Ordinance.

Managing Owner and Tenant Relations
Formation of Owners’ Incorporation: Deed of Mutual Covenant; Building Management Ordinance; consultation channels with landlords and tenants.

Managing Risk and Liability
Statutory and professional liability in property management: Insurance; negligence; nuisance; employer’s liability and contractor’s liability.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The principles of property management will be introduced in lectures. Application of the principles to solve property management problems will be taught in case studies, role play and management games. Discussion will be facilitated in tutorial by small group studies, which provide opportunities for students to deliver their discussion results and thinking. Lectures, seminars, laboratory as well as tutorials will form a basic skeleton for learning the subject.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and presentation.

Two pieces of equally weighted coursework will be set out to assess the understanding of the students on this subject during the period of teaching and learning.

**Reading List:**

**Recommended:**


**Supplementary:**


<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE345</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 40% Examination 60%</td>
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<tr>
<td>Credit Value</td>
<td>3</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>BRE291</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>D.S. Drew (BRE) L.Y. Tang</td>
</tr>
</tbody>
</table>

### Subject Aim:

This subject is intended to:

1. Equip students with the skills and knowledge to measure buildings and property accurately and efficiently and produce appropriate documentation to obtain a competitive price.

### Learning Outcomes:

Students will demonstrate their ability to:-

1. Prepare, examine and compare documentation to be used in procurement of building works and property.
2. Quantify and describe new building works and alteration work.
3. Analyse and synthesis composition of unit rates and an appreciation of the cost.

### Brief Syllabus Content:

**Measurement and documentation of new building work, alteration work and property:**

Organisation and systems of measurement including subdivision of building elements, gross measurement, schedules and other preparatory documentation such as query lists. Conventions used in recording dimensions and descriptions. Mensuration commonly used in measurement including mean girth, formulae for regular figures and methods of measuring irregular figures, interpolation and extrapolation of ground levels, gross and net floor areas. Measurement techniques: measurement of buildings, comparative studies of measurement procedures and examination of forward trends. Communication between buyer, designer, construction and estimator; types of documentation and their uses; preparation and uses of bills of quantities and specifications; preambles and preliminaries.

**Estimating:**

Factors influencing the pricing of new works and property. Tender documentation: tendering with or without bills of quantities. Contractor selection: competition or negotiation. The role of the estimator. Evaluation of resources: labour, plant and materials. Enquiries for materials and sub-contract prices; calculation of unit rates; calculation of preliminaries and temporary works. Estimator’s cost report to management. Head office and company overhead costs. Detailed analysis of the method statement, programme of works etc; and their influence on the preliminary costs required for the project.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
## Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):
The theory and rationale will be delivered in lecture periods. Practical experiences will be relocation in the tutorial periods.

## Assessment strategy (assessment of student performance resulting from learning tasks):
Examination and coursework will constitute 40% and 60% of the overall work of the subject respectively. The coursework grade will comprise two assignments.

The coursework for this subject will be very practical in nature. The first assignment will require the students to prepare an appropriate pricing document based on measured quantities. This will be based on background information which is mainly in the form of drawings and specification.

The second assignment will require the students to price the document given in the first assignment.

Both pieces of coursework will be undertaken on an individual basis.

## Reading List:

### Recommended:
- Royal Institution of Chartered Surveyors (1979) *Hong Kong Standard Method of Measurement for Building Works* 3rd Edition, Royal Institution of Chartered Surveyors (Hong Kong Branch)
Subject Code: BRE346
Level: 3
Contact Hours: PW: 140
Student Effort Hours: 154

Assessment Method: Coursework 100%
Credit Value: 4

Pre-requisites: BRE218 or equivalent
Co-requisites: Nil
Exclusions: Nil

Subject Leader/Lecturer/Dept.: S.W. Fong (BRE)

**Subject Aim:**

This subject is intended to:
1. Encourage the critical investigation, analysis and synthesis in solving problems in the professional context.
2. Provide an environment for the student to develop skills in identifying and solving problems and allows the integration of knowledge gained in separate subject areas.
3. Promote the students' understanding of the interdisciplinary and course specific nature of the development and construction process and develops team working.
4. Develop an outlook for construction and surveying practices in other countries.

**Learning Outcomes:**

Students will demonstrate their ability to:-
1. identify and diagnose problems in the development and construction process, including social, technical, economical and environmental issues.
2. integrate and create knowledge and skills acquired in various subject areas and to solve problems in a professional manner.
3. keep abreast current and future development of the professional surveying industry in Hong Kong, Asia Pacific Region and worldwide and make appropriate use of such knowledge in proposed analysis and actions.
4. communicate and work effectively with members from same or different professions, including effective oral/written presentation of analysis, justification of recommended actions, and persuasive messages intended to affect the perceptions of others.
5. appreciate the differences in construction or surveying practices between Hong Kong and other countries through an in-depth study.

**Brief Syllabus Content:**

A series of construction and property related project scenarios will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The projects will require students to make use of and integrate knowledge from previous and current subject modules. Each project will include elements of group and individual work. The projects require students to develop solutions creatively and to present recommendations systematically. Comparative study between construction and surveying practices in Hong Kong and other countries.

**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The projects will provide a student centered problem-based learning approach in a professional or industrial setting. The projects will be delivered by a team of project tutors, with overall co-ordination by one member of staff to ensure continuity and relevance of project subject matter. Project material will be co-ordinated at the start of each academic year to ensure quality and consistency of the project information given to the students. This subject will be timetabled one day per week throughout 3 semesters of year 2.

An important part of the subject is the comparative study of the construction and real estate industry of selected countries and Hong Kong. A Study Tour or equivalent is to be organized by students.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

The subject will be assessed by projects, presentations and reflective journals. Each project will contain tasks such that marks can be awarded for group work as well as for individual work.

**Reading List:**

Construction and Management-related Journals, Library Databases, Statistics, Module Texts and Internet Resources

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
Subject Code: BRE347
Level: 3
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method:
Coursework: 40%
Examination: 60%

Credit Value: 3
Pre-requisites: BRE216
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: T.I. Lam (BRE) Y.P. Leung (BRE)

**Subject Aim:**

*This subject is intended to:*

1. Enable students to understand economic theories and analytical techniques related to real property and urban land issues.
2. Enable students to understand the factors affecting construction cost.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Use relevant economics principles to develop the ability to analyse the real estate market and urban economy.
2. Utilise skills to synthesise coherent arguments and policy implications to support decision-making process in urban development policies.
3. Analyse the factors affecting construction cost at an industry and project level.
4. Compile cost plan for a given project using cost records.
5. Communicate principles, theories and cost data effectively.

**Brief Syllabus Content:**

**Economic Theories & Concepts underlying Urban Land Issues**

Nature of land economics, land policies and land administration. Theories of urban growth and urban structure, and economics of urbanization. Theories of land rent and urban land use pattern. Analysis of real estate market. Techniques of economic analysis of urban land development and redevelopment. Economics of property rights and public sector intervention.

**Construction Economics**

Experimental work:

Not applicable

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The main theory and concepts will be delivered in lectures, with application and discussion being covered in seminars and tutorials. Guest speakers may be invited where possible to instil latest market trend. The intention is to create an environment that encourages active learning, consolidate understanding and enable application of the theories.

Assessment strategy (assessment of student performance resulting from learning tasks):

Assessment will be based on examination (60%) and coursework (40%). The coursework will include:-

<table>
<thead>
<tr>
<th>Assessment Tool</th>
<th>Assessment of Outcome(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>(i) Essay writing*</td>
<td>1, 2, 3 and 5</td>
</tr>
<tr>
<td>(ii) Exercises**; and</td>
<td>3 and 4</td>
</tr>
<tr>
<td>(iii) Seminar presentation</td>
<td>5</td>
</tr>
</tbody>
</table>

*Group projects on topics assigned related to the contemporary issues within the context of Hong Kong will be used to assess students’ ability to analyse the real estate and construction market and to appreciate the factors influencing the real property and urban land policies

**Exercises will be conducted on cost planning and cost adjustment using indices

Reading List:


Supplementary:

*Hong Kong Statistics* (current issues), Hong Kong SAR Government
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE348</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>3</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Sem:14 and PW:140</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>240</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 100%</td>
</tr>
<tr>
<td>Credit Value</td>
<td>6</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>BRE218 or equivalent</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>C.H. Lau (BRE)</td>
</tr>
</tbody>
</table>

**INTEGRATED PROJECT II**

**Subject Aim:**

*This subject is intended to:*

1. Develop critical investigation skills in solving problems in a professional context.
2. Provide an environment for the student to develop communication skills in identifying and solving problems.
3. Integrate the knowledge gained in separate subject areas.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Evaluate the concepts, tools and techniques of property management practices.
2. Evaluate the interactions between different types of property stakeholders within the economic and social environment.
3. Apply property management techniques to ensure the efficient use and maintenance of buildings.
4. Evaluate the property management related contemporary issues.

**Brief Syllabus Content:**

Practice-based or problem-based property management project(s) will be set to replicate a situation which could be met in practice. The projects will require the students to relate local housing policy or management issues and integrate knowledge from pervious and current subject modules. Each project will include elements of multi-disciplinary and individual works. A study tour will also be included. Sometimes the restrictions of the study environment will require the above learning arrangements to be modified.
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The projects will provide a student centered problem-based learning approach in a professional or industrial setting. An important part of the subject is a study tour or equivalent to be organized by the students to study property management industry of selected regions.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

The subject will be assessed on the coursework projects. Each project will contain tasks such that marks can be awarded for both group work and individual work.

**Reading List:**

Real Estate and Property Management Journals, Databases, Statistics and Module Texts
Subject Code: BRE349  
Level: 3  
Contact Hours: Lect:21 TU/Sem:21 Lab:8  
Student Effort Hours: 120  
Assessment Method: Coursework 40% Examination 60%  
Credit Value: 3  
Pre-requisites: BRE291  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: W.K. Kong (BRE)  

**Subject Aim:**

*This subject is intended to:*

1. Provide students with an overview of the various building services engineering systems in modern buildings,
2. Understand the basic design intent of various building services systems and their integration with the building fabric and architectural features.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Possess a knowledge of the system configuration and operation of various building services systems.
2. Relate how different building services systems can help to control and improve the indoor environment.
3. Identify the relationships between the design of building services systems and the overall building design.
4. Appreciate the cost and value relationship on the selection of appropriate building services systems.
5. Relate issues on environmental impact to the design of building services systems and overall building design.

**Brief Syllabus Content:**

Plumbing & Drainage: Water supply and drainage system for high rise buildings. Simple design on pipe sizing for plumbing and drainage pipes. Sewage treatment process.


HVAC/MVAC: Assessment on the efficiency of air-conditioning process. Large scale air conditioning systems configuration and operation.

Internal transportation: The configuration and operation of lifts and escalators. Assessment to the quality of services for life operation.

Fire Services: Prevention, detection and suppression systems. Integration of fire services system to other building services systems.

An introduction to the measurement for building services installations and concepts of life cycle costing.

Environmental issues: the effects of external environments to the design of building services system. An introduction to environmental impact assessment and ISO 14000.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The learning and teaching approaches for the subject comprises lectures, tutorials and laboratories.

Lectures aims at delivering the basic core of concepts whilst ideas and operations will be further elaborated and discussed in the tutorials. Presentation by students during tutorials on selected topics will also be arranged. Laboratories are provided to allow students to relate theories and concepts to real situation.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Assessment will be in the form of written examination, oral presentation, case study report and laboratories.

Written examination aims to assess students’ ability to apply concepts learned for solving problems on building services design and operation.

Oral presentations on specific topics on building services serves to assess students’ understanding to the topics chosen.

Case study report aims to consolidate students’ knowledge and relating design of building services system to the overall building design.

Laboratories allow students to relate theories to actual practices and operations.

The split between coursework and examinations will be 40/60.

**Reading List:**

**Recommended:**


Hall F. (1994) *Building Services & Equipment*, 3rd Vols. 1 to 3, Longman


**Supplementary:**


HKSAR (1994) *Code of Practice for Minimum Fire Services Installations and Equipment*


H.K. SAR Government, *Building Ordinance and Regulations* CAP.123


Subject Code: BRE350  
Level: 2  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120  
Assessment Method: Coursework 50% Examination: 50%  
Credit Value: 3  
Pre-requisites: BRE2921  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: K.W. Wong (BRE)  
P.C. Chan (BRE)

**PROJECT MANAGEMENT AND PROCUREMENT**

**Subject Aim:**

*This subject is intended to:*

1. Extend students’ understanding of management principles and develop the knowledge of project management and procurement in the construction industry.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Apply knowledge of quality, safety and environmental management for construction projects.
2. Use planning techniques.
3. Negotiate and resolve conflicts between management and employees.
4. Communicate with others in a clear and articulate manner.
5. Present ideas and arguments verbally in formal presentations, seminars, and role play.
6. Work with others and take responsibility for an agreed area of a shared activity.
7. Identify and propose solutions to problems.
8. Identify the different forms of procurement and assess their impacts on the success of a project.
9. Describe the principles underlying the choice of appropriate procurement systems.
10. Apply and compare alternative procurement systems for all types of construction work.

**Brief Syllabus Content:**

*Quality, Safety and Environmental Management*

Quality assurance system, safety management system and environmental management.

*Human Resources Management*

Recruitment, selection and engagement of personnel in construction organizations, and Industrial relations.

*Planning Techniques*

Planning and programming techniques including bar chart, initial path analysis and line of balance.

*Procurement*

The nature of building process, models of the process. Categorisation of procurement systems. Alternative procurement and systems such as traditional sequential, accelerated traditional, competitive design and build, enhanced design and build, novated design and build, management contracting and construction management. Choice of appropriate procurement method, allocation of risks and liabilities of the major parties to the arrangement. Construction partnering and its impact on procurement.

**Teaching activities:** Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Learning and Teaching Approach:

Lectures will be used to introduce systems and techniques whilst the small group work will be used for the application of management skills through role-play and seminar presentation.

Assessment strategy (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute 50% and 50% of the subject respectively. The coursework assessment shall be based on role play, seminar presentation, seminar discussion and assignments.

Reading List:

Recommended:


### Subject Code: BRE351  
### Level: 3  
### Contact Hours: Lect:21 Sem/Tut:21  
### Student Effort Hours: 120  
### Assessment Method: Coursework 30% Examination 70%  
### Credit Value: 3  
### Subject Leader/Lecturer/Dept.: L.Y. Tang (BRE) M.J. Hills (BRE)

#### Subject Aim

This subject is intended to:

- Introduce students to the legal aspects of construction contracts and provide them with the ability to critically apply the practices and procedures involved.

#### Learning Outcomes

Students will demonstrate their ability to:

1. Apply the general principles of contract law to construction contracts.
2. Interpret the contractual procedure, rights and duties stipulated in a construction contract.
3. Provide solutions to routine and unfamiliar contractual problems.
4. Gather and analyse information relating to contemporary contractual issues.
5. Communicate effectively with legitimate reasoning.
6. Reflect on and review their studies in the contract of the construction industry.

#### Brief Syllabus Content

- Contractual and common law principles and practice.
- Characteristics of various standard forms of local and international construction contracts.
- Role and relationship of the parties under different contractual arrangements.
- Procedure for instructions, variations, payments, claims and certification.
- Responsibility of the contract administrator.

#### Learning and Teaching Approach

Lectures, tutorials and seminars are conducted throughout the semester. A lecture schedule outlining the topics to be introduced is distributed to the students at the beginning of the semester. During the lecture period topics are introduced, often with reference to professional journal papers. In tutorial periods, students are required to discuss real-life cases related to the lecture topic and during seminars students are required to present the findings of an assigned research topic.

#### Assessment strategy

An end of semester 2 hour final examination accounting for 70% of the overall assessment.

Coursework comprising one seminar presentation on a contractual issue, accounting for 30% of the overall assessment.

#### Reading List


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Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
### Subject Code
BRE352

### Level
3

### Contact Hours
LT:21 TU/LB:21

### Student Effort Hours
120

### Assessment Method
Coursework 30% Examination 70%

### Credit Value
3

### Pre-requisites
Nil

### Co-requisites
Nil

### Exclusions
BRE2921

### Subject Leader/Lecturer/Dept.
M.F. Ho (BRE)  
Y.P. Leung (BRE)

### Subject Aims:

This subject is intended to:

1.  Provide a macroscopic view of management theories
2.  Apply management knowledge in the built environment.
3.  Use management techniques, skills for managing construction projects

### Learning Outcomes:

Students will demonstrate their ability to:

1.  Make comparisons between a range of management theories and concepts
2.  Draw upon general management concepts through the skill of reflection and apply to the construction and real estate industry
3.  Use management techniques to manage construction projects

### Brief Syllabus Content:

A general overview of management theories: scientific management approach, human resources approach, systems approach, organisational behaviour approach, and situational approach.

Management concepts: nature of management, ethics management, managerial role and management functions

Management functions: planning, organizing, leading, and controlling

Context of the construction and real estate industry: internal and external environment

Relevance of construction management

Management in construction and project management techniques: managing time (project planning and programming techniques); managing quality (quality management system and management science); managing cost (financial management and project life cycle)

### Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The theory will be delivered in lecture periods. During the tutorial sessions, management cases analysis, role play, in class discussion, debate will be arranged. Students’ presentations, coursework feedback and guided problem-solving shall be conducted during seminars. External guest speakers from industry will be invited to offer up-date information and practices.

### Assessment strategy (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute 70% and 30% of the overall grade of the subject respectively. The coursework assessment will include essay writing, exercises, seminar presentation and in class discussion (at least one coursework to be issued). Group projects on topics assigned related to the contemporary issues within the context of Hong Kong will be used to assess students’ ability to manage different types of construction projects.

### Reading List:

**Recommended:**
Hong Kong Ethics Development Center (HKEDC) (1996) Ethics for Professionals (Architecture, Engineering and Surveying): A Resource Portfolio for Hong Kong Universities, HKEDC, and Hong Kong.

Notes and study guide materials available on the SMILE website.

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"Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)"
Subject Code: BRE353  
Level: 3  
Contact Hours: Lect: 21 Sem/Tut: 21  
Student Effort Hours: 120  
Assessment Method: Coursework 50%  
Examination 50%  
Credit Value: 3  
Pre-requisites: BRE2921, BRE352 or equivalent  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: P.W. Fox (BRE)  

**PROJECT AND CONSTRUCTION MANAGEMENT**

**Subject Aim:**

This subject is intended to:

1. Extend students' understanding of management principles and the legal environment to develop and to consolidate the basic knowledge of project and construction management in the built environment.
2. Develop students’ understanding of good business practice in the built environment, as applied to operations management.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Understand the basic principles and practice of project management in the construction industry;
2. Understand the basic nature of business organisations in the construction industry, their efficient organisation, social and ethical responsibility;
3. Apply operational planning techniques for control of construction & development projects;
4. Use effectively a range of communication skills;
5. Use performance data of management operations and organise resources;
6. Make appropriate operational decisions in business organizations;
7. Contribute as a team member and to lead effectively

**Brief Syllabus Content:**

**Business functions:** production, purchasing, accounting, estimating, surveying, personnel, research, investigation, design, marketing and finance.

**Management skills:** report writing, scheduling, interpersonal skills and methods for problem solving.

**Structure of the construction and real estate industry:** nature; internal and external environment; professional organizations, statutory institutions and associated bodies; roles and relationships amongst clients, the various professional parties in the design and production teams and suppliers – the fragmentation of the construction industry and its implications in professional practice and contractual arrangements.

**Project Management in Construction:** the project life-cycle, introduction to project procurement, production management, facilities & maintenance management and the design and production relationship. Project planning and programming techniques; resource allocation and levelling; selection of appropriate construction methods. Information management for quality management (QA, TQM), environmental management, production control and records.

**Resources:** manpower, material, plant and finance. Project information management. Office and site organizations, production & purchasing departments. Recruitment, selection and engagement of personnel in the construction and real estate organizations. Managing types of labour: directly employed, sub-contract and management staff. Safety, health and welfare, employee / industrial relations.

**Social responsibility and ethics.**
CONSTRUCTION TECHNOLOGY II

This subject is intended to:

The overall aim of the subject is to develop understanding of contemporary construction methods and processes associated with substructure, superstructure, cladding and internal elements in medium to large scale construction projects. The subject also aims to provide insight to the current themes that are driving developments in construction technology.

Objectives are:
1. To identify and understand the range of advance technologies that are available and appropriate for the construction of contemporary buildings.
2. To facilitate an understanding of the centrality of technological decision making in the context of the wider construction process.
3. To provide the necessary skills to allow the evaluation of a range of technologies towards the adoption of an appropriate design and construction decision.

Learning Outcomes:

On completion of the subject the students should have acquired the ability to:-
1. Possess knowledge of processes and methods for the development of construction projects.
2. Use the knowledge and methods for different types of construction.
3. Solve the identified technological problems occurred during construction projects’ processes.
4. Apply the code of practice, environmental and safety issues into the construction processes.

Brief Syllabus Content:

The overall process of a construction project.
Site production: engineering approach in producing the site layout and site planning.
Sub-structural construction: deep foundations including pile foundations and caissons, basement’s construction.
Super-structural construction: reinforcement concrete structures, steel structures, composite building systems.
Complex walls.
System formworks.
Environmental and safety issues in construction process.
IT in construction process.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

A series of interactive lectures, tutorials and seminars will be delivered through the whole semester. These will be supplemented by guest speakers and laboratory works. Problem-based learning approach is adopted through projects to assess the students’ systematic knowledge and integrate the knowledge into real cases.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)

Assessment strategy (assessment of student performance resulting from learning tasks):
Examination and coursework will constitute 70% and 30% of the overall marks respectively.

The assessment will be focused on the students’ abilities:

- To analyse and interpret the issues through construction process.
- To apply the knowledge into a simulated situation.
- To solve the key problems in other similar situations.
- To improve communication and build up teamwork skills.

**Reading List:**

**Recommended:**


**Supplementary:**


BRE (British Research and Establishment) Digests.


Wong, W.S. (1991) *Building Materials and Technology in Hong Kong*, All Arts Ltd.
Subject Code: BRE3931  
Level: 3  
Contact Hours: Lect:21 PW:56  
Student Effort Hours: 120  
Assessment Method: Coursework 100%  
Credit Value: 4  
Pre-requisites: BRE291, BRE204 or equivalent  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: A.C. Cheung (BRE)

**TEMPORARY WORK DESIGN**

**Subject Aim:**

*This subject is intended to:*

1. Bring students’ attention to the vertical integration of the subject areas learned in Level 2 such as Structure, Construction Technology Engineering Mathematics together with the working experience gained in Industrial Centre to the subject areas of Level 3 Structure II & Construction Technology II through design project whilst the inter-relation of the horizontal integration between subjects are also important in solving a problem-based project work.

2. Integrate and apply knowledge gained from individual subject areas in technology, management, economics and legal aspects.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Evaluate the importance of different types of falsework and formwork.
2. Design falsework and formwork for building construction.
3. Appraise alternative solutions to falsework and formwork design.
4. Recognize the inter-relationship and interdependence of various areas in construction.
5. Comprehend the operations, technology & structure, management, economics and legal impacts of the construction industry both local and other countries.

**Brief Syllabus Content:**

The basic concepts of falsework.  
Formwork classification economies of formwork, formwork finishes and surface treatments, tolerance, proprietary system formwork, types of form types.

The choice of materials and systems.

Falsework design: procedures, materials and components, forces applied to falsework, analysis of falsework structure, foundations to falsework; design using scaffold tube and fittings, standard solutions and other considerations affecting certain design solutions.

Formwork design: permissible stress for solid timber and plywood, loading on formwork, design concepts and procedures for wall forms, column forms, beam sides and slab soffit forms.

International study.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Structured tutorials are carried out at different stages during the progress of project to provide learning support to students in achieving the outcome.

A structured design project based on real life situation is to be used for setting the project and consists of the components. The project will be divided into two parts. The first component deals with the design of the structural elements of building components, while the second component deals with preparation of falsework systems to facilitate the construction of the structural elements. The third component is to evaluate the different systems of formwork and falsework and to appraise alternation solutions. Students are asked to form in groups of five. By providing the students basic drawings and design brief, they are asked to propose a suitable structural form for the project, and to prepare the subsequent design drawings, structural calculations and specifications for the first part of the project. The second part of the project is the further development of the works in part 1, students are asked to produce plan and proposal for the falsework system for facilitating the construction. Formal lectures will be conducted with supplement of tutorials during the lecture sessions.

For international study, an important part of the subject is the comparative study of the construction and real estate industry of selected Asia Pacific countries and Hong Kong. A study tour or equivalent is to be organized by students. Students will select a country/region to study the structure of the property and construction industry on a wide range of topic areas of visit to bodies of the countries, which may include, government bodies, research institutions, universities, construction contractors and consultants, property developers, etc. The study tour will be organised by students between semesters. On completion of the tour, students are asked to prepare a report on what they have observed and to carry out a critical comparison between the country visited and Hong Kong. Also, a public presentation will be arranged to let students present their findings in a formal situation. It must be emphasized that input from teaching staff on the study tour is kept to a minimal and is provided as guidance in order to allow the student more autonomy to administer the projects and learn through the process of planning and execution. A final report and a public lecture for the International Studies will be presented and assessed by the Project Tutor.

Assessment strategy (assessment of student performance resulting from learning tasks):

The assessment of the subject will be by continuous assessment. For the design project, students will produce a report, with drawings, specifications and any other relevant information appropriate for project submissions. They also need to prepare a group presentation on their findings and work done together with the submission if required. At regular intervals, students will be asked to report on the progress of work which will be commented and assessed by the supervisor. The design project should demonstrate the students’ ability to design formwork/falsework systems and to appraise their proposed solutions.

For international study, the assessment will be achieved through the initial proposal, the report and the public lecture. It is expected all students will participate in various stages of the project, therefore, each student have to state at which stage they are involved in the project so that contributions by individual student can be observed.

Reading List:

No standard text are recommended, since students have to refer to various literature in order to achieve the requirement of the design project.

Reference will be made to current articles in journals, local newspaper, would press, proceedings dealing with topics of current importance.

Recommended:


Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Lectures will be used to introduce principles and theories whilst the small group work and workshops will be used for the application of the principles and theories to management problems through role-play, case studies, simulation and management games.

Assessment (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute 50% and 50% of the overall grade of the subject respectively. The coursework assessment shall be based on the workshops, seminar/tutorial activities, seminar/tutorial discussion, assignments and business report. Some of these will be summative assessment with the grades contributing to the subject grade. Other assessment will be for formative purposes only.

Reading List:

Recommended:

Notes and study guide materials available on the SMILE website.

Supplementary:
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE395</th>
<th><strong>BUILDING SERVICES</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>3</td>
<td><strong>Subject Aim:</strong></td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 TU/Sem:14 Lab:8</td>
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<tr>
<td>Student Effort Hours</td>
<td>120</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 50% Examination 50%</td>
<td></td>
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<tr>
<td>Credit Value</td>
<td>3</td>
<td>1. Provide students with an overview of the various building services engineering systems in modern buildings,</td>
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<tr>
<td>Pre-requisites</td>
<td>Nil</td>
<td>2. The basic design intent and their integration with the building fabric and architectural features.</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
<td><strong>Learning Outcomes:</strong></td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
<td>Students will demonstrate their ability to:-</td>
</tr>
<tr>
<td>Subject Leader/ Lecture Dept.</td>
<td>S.T. Chan (BRE)</td>
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<tr>
<td></td>
<td></td>
<td>1. Understand the basic design for the major building services engineering systems found in buildings.</td>
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<td>2. Identify the relationship between the design of building services and the overall building design.</td>
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<td>3. Provide comments on the design and operation of building services system at the design and construction stage.</td>
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</table>

**Brief Syllabus Content:**

Distribution services: electricity distribution and utilisation, earthing and bonding requirements, lightning protection of structures. Plumbing and drainage, flushing water supplies and refuse collection systems.

Environmental services: basic principles to air conditioning, heating and ventilation.

Vertical and horizontal internal transportation: lifts and escalators – planning and construction.

Fire and security systems: equipment, prevention and detection and suppression systems.

**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

Teaching periods will adopt a range of methods which could include lectures by staff, small group discussions, working in groups, student presentations, project-based and problem-solving tasks, laboratory and case study work.

Experimental work: a number of laboratories will be arranged.

The intention is to create an environment that encourages active learning. Students will be encouraged to reflect on their learning activities to review what they have learned and to plan further action and activity.

*Teaching activities:* Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Assessment strategy** *(assessment of student performance resulting from learning tasks)*:

Examination and coursework will constitute the 50% and 50% of the overall work of the subject respectively. The coursework mark will be based on the assignments, seminar presentations and discussions.

Assessment methods are intended to ensure the students achieve the learning objectives set, and assist learning through constructive feedback. Examples of suitable assessments including assignments, projects, presentations, critiques, tests and examinations.

<table>
<thead>
<tr>
<th>Reading List:</th>
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<tbody>
<tr>
<td><strong>Recommended:</strong></td>
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<tr>
<td>Hall F. (1994) <em>Building Services &amp; Equipment</em>, 3rd Vols. 1 to 3, Longman</td>
</tr>
<tr>
<td><strong>Supplementary:</strong></td>
</tr>
<tr>
<td>HKSAR (1994) <em>Code of Practice for Minimum Fire Services Installations and Equipment</em></td>
</tr>
<tr>
<td>H.K. SAR Government, <em>Building Ordinance and Regulations</em> CAP.123</td>
</tr>
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</table>
Subject Code: BSE332

FIRE SERVICES

Level: 3

Contact Hours: Lect/Sem:28
Tut:9 Lab:9

Student Effort Hours: 120

Assessment Method: Examination 70%
Coursework 30%

Credit Value: 3

Pre-requisites: BSE222, BSE251 or equivalent

Co-requisites: Nil

Exclusions: BSE336

Subject Leader/Lecturer/Dept.: BSE

Subject Aim:

This subject is intended to:

1. Provide base knowledge sufficient to enable students to design and appraise fire engineering systems, based on a second understanding of the background concepts.

Learning Outcome:

Students will demonstrate their ability to:

1. Understand and appraise the background behind legislation and codes of practices related to fire services in building.
2. Design and make rational choices of system, materials and equipment based on requirements from local regulations as well as performance from basic fundamentals.
3. Be able to develop in depth studies in fire engineering and research by delivering fundamentals in fire science.

Syllabus Content:

Fundamental Concepts of Fire:
Fire triangle, properties of fuel, fire extinguishing mechanisms.

Legislation:
Local regulations, code of practices, building regulations, legislative issues, role of engineers in fire services.

Fire Control Systems:

Smoke Control Systems:
Fire safety principles in smoke management and in ventilation and air conditioning systems. Pressurisation of staircases and safety zones in hazardous areas, smoke extraction, smoke vents.

Fire Detection and Alarm Systems:
Principles of fire detection and alarm systems, unwanted alarm, interface with other installations and building management.

Fire Resisting Construction:
Properties of material under fire environment, fire resisting period, compartmentation. Means of access and escape.
**Learning and Teaching Approach:**

The realisation of the aims will be based on lectures, tutorials, assignments, laboratories, directed reading and industrial/site visits. Lectures will be used to introduce various systems and the necessary engineering design knowledge, backed up by films and slides. Tutorials will provide the opportunity for questions and discussions on problems related to lectures, assignments, and case studies. Assignments will emphasise on practical design solutions and performance appreciation. There will be a two-hour test.

Laboratories will develop student ability to understand physical phenomena of fire services and to interpret experimental data with practical design criteria of systems. Laboratory sessions will be jointly organised together with other technical subjects of Stage 2 of the programme. Industrial visits will allow students to appreciate system operation, maintenance and installation.

**Assessment:**

Based on an examination mark 70% and continuous assessment mark 30%.

The continuous assessment mark is made up from one in class tests, one seminar and laboratory reports.

**Reading List:**

**Recommended:**

- *SEPE Handbook of Fire Protection Engineering (2nd Ed.)*, NFPA, 1995
- *Building Regulations*, SAR, Hong Kong Government
- *Manual of Firemanship*, HMSO
- *NPFA Standards*, ANSI/NFPA
- *Design of Smoke Management Systems*, ASHRAE, 1992

**Related Laboratory Work:**

- Investigation of the sensitivity of a fire detection system
- Study of the operating characteristics of a sprinkler/water mist system
- Smoke movement

**Related Design Work:**

- Automatic Sprinkler System
- Hose Reel/Fire Hydrant Systems
- Smoke Extraction Systems
- Fire Detection and Alarm Systems
### Subject Code
ELC3401

### ENGLISH IN THE WORKPLACE (EIW)

<table>
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<th>Level</th>
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<tr>
<th>Pre-requisites</th>
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<th>Co-requisites</th>
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<th>Subject Leader/ Lecturer/Dept.</th>
<th>(ELC)</th>
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**Subject Aim:**

This subject is intended to:

1. To Develop those English language skills required by the students to communicate effectively in their future professional careers.

### Learning Outcomes:

The subject is designed to introduce students to the kinds of communication skills both oral and written that they may be expected to need in their future professions. These skills will be necessary for successful employment in any company/organisation where internal and/or external communication is conducted in English.

The study method is primarily based on seminars. These will include discussions, role-play, individual and group activities. Use will be made of video and tape recordings, library research, and our Centre for Independent Language Learning. Students in need of additional help will be required to attend a supplementary English programme organised by the English Language Centre.

### Syllabus Content:

This syllabus is indicative. The balance of the components, and the weighting accorded to each will be based on the specific needs of the students.

1. **Language appropriacy:** introducing notions of context-sensitive language use in both spoken and written English; for example, writing e-mails and using the telephone.

2. **Seeking and supplying information:** practice in the oral skills required in fact-finding and job-seeking interviews, problem-solving negotiations, and conducting questionnaire surveys.

3. **Workplace writing:** selecting and using relevant content; appropriate style; acceptable format; structure and layout, in letters, memoranda, reports, notices for public display, proposals, presentation notes, forms and questionnaires.

4. **Language development:** improving and extending relevant features of students’ grammar, vocabulary and pronunciation.

### Learning and Teaching Materials:

*English in the Workplace* published by the English Language Centre, the Hong Kong Polytechnic University and specially prepared material from the Centre will be used throughout the course. In addition, teachers will recommend additional reference materials as required.
Reading List:

References for students

General


Grammar, vocabulary and style

INDUSTRIAL SAFETY I

Subject Aim:

This subject is intended to:

1. Enable students to meet the growing demand for industrial safety training and increase their awareness of the importance of health and safety. Emphasis is placed upon safety awareness, accident prevention, and the management issues associated with safety in the construction and real estate industry.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Be aware of the principal features of occupational health and safety, its historical context and current perspectives.
2. Understand of the risk and safety issues, legal obligations, and the need to act in accordance with the codes of safety practice.
3. Apply suitable methodologies to determine/eliminate safety risks in relevant practical applications.

Syllabus Content:

Overview

Occupational Health Practice

Safety Technology

Accident Prevention
**Learning and Teaching Approach:**

Whenever possible, students will draw upon their own work through structured assignments or coursework to develop independent learning skills. Students will be supported in this training process by the provision of study guides, handouts and relevant reading materials. Lectures/workshops will be an integral component which allows students to:

- review and discuss the concepts covered in the study materials;
- develop a practical understanding of the related safety technologies; and
- reinforced their learning through course assignments and case studies.

**Assessment:**

This subject is assessed on continuous basis. Assessment will focus on the development of the students’ understanding and application of core principles rather than simply testing their knowledge. Examples of assessment methods include:

- written course assignments on core topics; and
- appreciation tests in multiple choice and short quiz format.

Final assessment will be conducted in the form of appreciation test and/or short questions.

**Reading List:**

Specially prepared material from the IC will be used throughout the unit. In addition, lecturers will recommend additional reference material as required.
Subject Code: IC302  
Level: 3  
Contact Hours: Lect/WS: 47  
Student Effort Hours: 70  
Assessment Method: Coursework 100%  
Credit Value: 2  
Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: Ir. W.K. Kwok (IC)

### Subject Aim:

This subject is intended to:

1. Undertake a building programme in the Faculty of Construction and Land Use. Emphasis is placed upon safety awareness, accident prevention, and the engineering and management issues associated with construction safety.

### Learning Outcomes:

Student will demonstrate their ability to:-

1. Aware the principal features of occupational health and safety, its historical context and current perspectives.
2. Understand the risk and safety issues, legal obligations, and the need to act in accordance with the codes of safety practice.
3. Handle basic safety management for their future supervisory positions in the construction industry.
4. Apply suitable methodologies to determine/eliminate safety risks in relevant practical applications.

### Syllabus Content:

**Overview**


**Occupational Health Practice**


**Construction Safety**


**Safety Technology**


**Accident Prevention**


**Construction Safety Management Issues**

**Learning and Teaching Approach:**

Whenever possible, students will draw upon their own work through structured assignments or coursework to develop independent learning skills. Students will be supported in this training process by the provision of study guides, handouts and relevant reading materials. Lectures/workshops will be an integral component which allows students to:-

- review and discuss the concepts covered in the study materials;
- develop a practical understanding of the related safety technologies; and
- reinforced their learning through course assignments and case studies.

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- appreciation tests in multiple choice and short quiz format.

Final assessment will be conducted in the form of appreciation test and/or short questions.

**Reading List:**

Specially prepared material from the IC will be used throughout the unit. In addition, lecturers will recommend additional reference material as required.
### Level 4 Subjects:

<table>
<thead>
<tr>
<th>Code</th>
<th>Title</th>
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</thead>
<tbody>
<tr>
<td>BRE 401</td>
<td>Construction Technology III</td>
</tr>
<tr>
<td>BRE 4051</td>
<td>Project Evaluation and Development</td>
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<tr>
<td>BRE 415</td>
<td>Dispute Resolution</td>
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<tr>
<td>BRE 416</td>
<td>Computerization of Construction Production &amp; Management</td>
</tr>
<tr>
<td>BRE 418</td>
<td>Real Estate Development</td>
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<tr>
<td>BRE 426</td>
<td>Geotechnical and Foundation Engineering</td>
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<tr>
<td>BRE 427</td>
<td>Applied Property Investment</td>
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<tr>
<td>BRE 4281</td>
<td>Construction Engineering Management</td>
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<td>BRE 4291</td>
<td>Real Estate Marketing</td>
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<td>BRE 431</td>
<td>Housing Studies</td>
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<td>BRE 432</td>
<td>Property Management II</td>
</tr>
<tr>
<td>BRE 435</td>
<td>Design, Adaptation and Conversion</td>
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<td>BRE 436</td>
<td>Applied Property Valuation</td>
</tr>
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<td>BRE 437</td>
<td>Facility Management</td>
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<td>BRE 438</td>
<td>Property Management Practice</td>
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<td>BRE 439</td>
<td>Engineering Contract Procedure</td>
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<td>BRE 440</td>
<td>Cost and Value Management</td>
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<tr>
<td>BRE 441</td>
<td>Professional Studies</td>
</tr>
<tr>
<td>BRE 442</td>
<td>Forecasting and Competition in the Built Environment</td>
</tr>
<tr>
<td>BRE 453</td>
<td>Building Services II</td>
</tr>
<tr>
<td>BRE 499</td>
<td>Dissertation</td>
</tr>
<tr>
<td>APSS 406</td>
<td>Managing Human Services in Changing Context</td>
</tr>
<tr>
<td>APSS 409</td>
<td>Health Policy and Administration</td>
</tr>
</tbody>
</table>
CONSTRUCTION TECHNOLOGY III

Subject Aim:

This subject is intended to:

1. Examine building production during construction. The component parts of the building fabric, whatever the form of construction, must be designed, fabricated and then assembled or erected on the site to produce the completed building. The processes must be properly chosen, planned and organized in order to achieve the optimum time, cost and quality requirements of the development project with minimum disturbances.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Solve the technological problems found on sites by workable solutions.
2. Assess and apply appropriate techniques to building production problems.
3. Apply a strategic approach to technological issues from the senior construction management point of view.

Brief Syllabus Content:

The integration of architectural, structural and building services in construction production.

Site production: methods of demolition and safety, building production systems, engineering approach in site/production planning, scheduling and control techniques, relevant resources e.g. mechanical plant; The issues of environmental protection during construction.

Concrete production: prestressing, post-tensioning and high-strength concrete, quality control; heat control and cooling systems in mass concrete production.

Prefabrication: on-site and off-site production and fabrication, transportation to site, site installation. Site fabrication.

Robotic construction.

Construction safety; Quality assurance.

Maintenance.

Sustainability.
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Interactive lectures are used to identify construction issues, to generate and explain the concepts. Theories and practices in construction production and planning and hence how to solve the problem arisen. The tutorials are carried out in a systematic guidance in group discussion to consolidate the subject matters learned in the lectures and to view different perspectives of construction problems and solutions. In the lectures and tutorial, case studies are used to analyze and interpret the issues, solutions and practices of construction projects. Site visit will be arranged to incorporate what are learned in classroom situations to a real-life situation to further enhance the knowledge of application and integration of theories and practices.

Seminar presentations are arranged for students to work in team to investigate topics either presented in lectures/tutorials or contemporary issues or state-of-art construction practices or case study of the construction of a particular building, etc.

The learning emphasis will be on developing the students’ analytical and critical approach to the solutions of production problems with particular reference to the production techniques and management issues in local situations.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

In both written examination and coursework assignment, students are assessed their abilities in solving technological problems found in construction project taking into account of the assessment and application of appropriate techniques and methods with a strategic approach from the construction management point of view.

The coursework mark will be based on the laboratory activities assignments, seminar presentations and discussions and site visit reports. In both coursework and examination, students should demonstrate their application and appraisal of concepts and knowledge.

Examination and coursework will constitute the 70% and 30% of the overall marks of the subject respectively.

**Reading List:**


**Supplementary:**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE4051</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>4</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Seminar/Tutorial/ Self Study</td>
</tr>
<tr>
<td>Student Effort Hours</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 100%</td>
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<tr>
<td>Credit Value</td>
<td>5</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>M.J. Hills (BRE) T.I. Lam (BRE)</td>
</tr>
</tbody>
</table>

**PROJECT EVALUATION AND DEVELOPMENT**

**Subject Aim**

*This subject is intended to:*

Develop students’ ability to critically evaluate, synthesise and integrate knowledge gained from a variety of sources related to the construction development process; and Provide the skills necessary to document and present proposals for the development of a construction project from inception to hand over.

**Learning Outcomes**

*Students will demonstrate their ability to:*

1. Evaluate the major issues involved in the process of developing a site for a client.
2. Identify the relevant laws, regulations and procedures that must be complied with through the development process.
3. Effectively adopt a teamwork approach to developing a project.
4. Propose solutions to complex technology and management problems associated with the proposal and development of a project.
5. Communicate effectively in a managerial role, including effective presentation of analysis, justification of recommended actions, and persuasive messages intended to affect the perception of others.

**Brief Syllabus Content**

Students are required to select a site and formulate original proposals for its development or redevelopment. This involves addressing the whole range of activities involved at the conception, design, construction and disposal stages of a typical construction project. The intention is to improve students’ comprehension of the whole of the development process. The project must not utilize existing proposals for the land, and must not be a case study of what someone else has already proposed, designed or built. The fact that the vacant land or existing buildings are real means that the planning, commercial, and amenity aspects can be thoroughly researched.

**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes)*

Seminars are used at junctures throughout the project as a mean for tutors to impart the project brief and stages of work to students, and as a platform for students to present their work to tutors upon the conclusion of each of the two phases. Periodic tutorials reinforce tutor seminars and are conducted by tutors with groups of five students at a time.

The pedagogical philosophy for this subject is student centered learning. For the most part, students are required to use a self study approach by using their own initiative to gain knowledge and discover ways in which to apply it to their project. The project tutors act mainly as mentors, facilitators, and assessors.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Assessment strategy** (assessment of student performance resulting from learning tasks)

- Students are assessed, individually and as a team, on their ability to analyse, critically evaluate, and synthesis information related to the integration of knowledge into the development and construction process of their project.
- The project is divided into Phase 1 and Phase 2. The first phase is carried out individually, whilst the second phase is carried out in teams of five.
- Each team is assigned a tutor who assesses the oral and written presentations for each phase in accordance with the prevailing PolyU grading system.

**Phase 1 - Project Proposal.** This is a piece of individual work comprising Stage (a) and Stage (b). During this phase each student will evaluate one potential site for development and present it to their team. The team, in consultation with their tutor, will evaluate the feasibility of the proposals and select one for further development.

**Phase 2 - Project Development.** This phase, comprising Stage (c), (d), (e), (f) and (g) is developed and presented as a team. The Written Report is assessed as a team effort, although each member will also be assessed individually on his or her oral presentation of a particular stage. This phase also includes an individual online test.

<table>
<thead>
<tr>
<th>Phase 1 Stage (a)</th>
<th>Selection of site</th>
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<tbody>
<tr>
<td>Stage (b)</td>
<td>Initial appraisal</td>
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<table>
<thead>
<tr>
<th>Phase 2 Stage (c)</th>
<th>Procurement method</th>
</tr>
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<tbody>
<tr>
<td>Stage (d)</td>
<td>Design team briefing</td>
</tr>
<tr>
<td>Stage (e)</td>
<td>Planning approval</td>
</tr>
<tr>
<td>Stage (f)</td>
<td>Production and control</td>
</tr>
<tr>
<td>Stage (g)</td>
<td>Proposals for disposal</td>
</tr>
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</table>

**Weighting**

<table>
<thead>
<tr>
<th>Phase 1 Project Proposal</th>
<th>Individual</th>
<th>Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Presentation</td>
<td>20%</td>
<td>-</td>
</tr>
<tr>
<td>Written Report</td>
<td>30%</td>
<td>-</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Phase 2 Project Development</th>
<th>Individual</th>
<th>Team</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oral Presentation</td>
<td>10%</td>
<td>-</td>
</tr>
<tr>
<td>Written Report</td>
<td>-</td>
<td>25%</td>
</tr>
<tr>
<td>On-line Test</td>
<td>15%</td>
<td>-</td>
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</table>

**Total Weighting**

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<tr>
<th></th>
<th>Individual</th>
<th>Team</th>
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<tbody>
<tr>
<td></td>
<td>75%</td>
<td>25%</td>
</tr>
</tbody>
</table>

**Reading List**


The Charter5ed Institute of Building (1996). *Code of Practice for Project Management: For Construction and Development*

Subject Code: BRE415  
Level: 4  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120

Assessment Method: Coursework 100%
Credit Value: 3
Pre-requisites: BRE206
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: M.J. Hills (BRE) K.H. Wong (BRE)

Dispute Resolution

Learning Outcomes

Students will demonstrate their ability to:

1. Explain the evolution of dispute resolution in an international context.
2. Identify the relevant laws, regulations and procedures and apply them to the resolution of disputes in Hong Kong’s construction industry;
3. Analyse the process of arbitration, mediation and adjudication;
4. Evaluate the implications involved, in terms of contractual and business relations, when making decisions about the choice of method to be used to settle construction related disputes;
5. Propose solutions to complex construction dispute cases both orally and in writing.
6. Communicate effectively.

Brief Syllabus Content

Litigation as a means of settling disputes.
Origins of arbitration and of alternative dispute resolution (ADR).
Different forms of ADR (conciliation, mediation, adjudication, expert appraisal, executive tribunal).
Dispute resolution processes in Hong Kong (arbitration, mediation and adjudication).
Application of laws relating to litigation, arbitration and ADR.
Law of civil evidence: classification of evidence; function of judge and jury; burden and standard of proof; facts that need not be proved by evidence; testimony; hearsay and opinion; admissibility of evidence. Expert witness.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes)

With an emphasis on the practice and procedures of arbitration and ADR, students will be required to undertake case study-based assignments, produce seminar presentations, lead debates during tutorial sessions, and conduct role-play exercises.

Assessment strategy (assessment of student performance resulting from learning tasks)

Formative assessments of students’ performance will be conducted on a continual basis by providing feedback on the learning activities. For the purpose of summative assessment, 50% of the coursework marks will be assigned to one oral presentation and one written report relating to the theoretical aspects of dispute resolution. The remaining 50% of the coursework marks will be assigned to one oral presentation and one written report relating to the law of evidence.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Reading List


Hills, M.J. (2001), *Building Contract Procedures in Hong Kong*. Longman Hong Kong Education


Supplementary:


Hills, M.J. (1992), *A Case for an Alternative Approach to the Resolution of Disputes Under JCT 80 Standard Form of Building Contract, MSc dissertation (Supervisor: Dr. R.F. Fellows)*, University of Bath

Kaplan, N. (1983), *Hong Kong Arbitration Cases and Materials*, Butterworths Asia


Relevant Ordinances and Regulations of the Hong Kong Government
Subject Code: BRE416
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120
Assessment Method:
- Coursework: 50%
- Examination: 50%
Credit Value: 3
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: A.N. Baldwin / H. Li (BRE)

**COMPUTERIZATION OF CONSTRUCTION PRODUCTION AND MANAGEMENT**

**Subject Aim:**

This subject is intended to:

1. Develop an understanding of the practical application of computer systems and packages in construction production and management.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Understand and demonstrate knowledge of the construction process and the role that information technology can play to support this process.

2. Understand and demonstrate knowledge of the application of computer systems at the construction production stage.

3. Be able to appraise commercially available and tailor-made computer packages in construction production and management.

**Brief Syllabus Content:**

The construction process within the overall project process.

Basic concepts of Management Information Systems.

Identifying the benefits of computer based systems.

Enterprise Resource Planning.

Computerized construction management using web based project management systems for project planning, information control, material control, progress control and quality assurance.

An introduction to virtual prototyping technology and product life cycle simulation.

**Learning and Teaching Approach:**

Lectures and workshops will be run throughout the semester period. A lecture schedule outlining the topics to be covered will be distributed to students in the first lecture of the semester. In the workshop periods, students will be required to assess and use the systems and to prepare group assignments.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
**Assessment strategy** (*assessment of student performance resulting from learning tasks)*:

Examination and coursework will each constitute 50% of the overall assignment for the subject. The coursework mark will be based on the assignments, presentation and discussions. Two assignments with equal contribution will be set.

The examination will be based on a 2 hours examination based on materials covered in the lecture periods and background readings. Coursework by assignment and group projects will be set to assess the students’ abilities and skills required in this subject.

**Reading List:**

**Recommended:**


**Supplementary:**


*The International Journal of Construction Information Technology*, The University of Salford.

**Recommended Web Sites:**


The 20th CIB W78 Conference on Information Technology in Construction: [https://www.cs.auckland.ac.nz/w78/](https://www.cs.auckland.ac.nz/w78/)
REAL ESTATE DEVELOPMENT

Subject Aim:

This subject is intended to:

1. Provide an integrated and consolidated intellectual framework for students to comprehend and analyze the current factors and key issues in affecting production and consumption of the built environment in our society.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Carry out a literature survey for a broad-base research topic related to land and property development.
2. Describe and evaluate the complex and dynamic process of real estate development, with special reference to the local context.
3. Distinguish and explain the significance of all the key social, political, economic, physical and regulatory factors affecting the performance of the property development industry.
4. Appraise the theoretical models and concepts in analyzing the current issues in property development.
5. Synthesize knowledge from various disciplines and apply them in solving practical problems in real estate development.
6. Communicate and present arguments in a clear and articulate manner using appropriate academic conventions.

Brief Syllabus Content:

Real Estate Development Process:
Models of Development Process; Strengths and Weaknesses of Development Models; Factors Influencing Real Estate Development; Transformation of Urban Built Environment.

Public Sector Regulations and Development Potential:
Concepts of Project Feasibility; Approaches in Development Control Decision Analysis; Political vs Technical Factors in Government Regulations; Judging Government Decisions.

Current Issues in Real Estate Development:
Property Finance and Property Cycles; Globalization of Real Estate; Land Development in China; Property-led Urban Regeneration.

Different Types of Real Estate Development:
Office, Residential and Industrial Development.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** (tasks and activities designed to achieve learning outcomes):

Interactive lectures - The lectures provide an explanation and evaluation of the important theories and concepts covered in the course contents. Visiting speakers from the industry may be invited to give guest lectures on specific topics.

Tutorial Sessions - Tutorials are organized for students to discuss the relevance of the past literature and/or work on particular problem-based cases in real estate development. Students are required to present and communicate their ideas and discuss their recommendations for the cases at the tutorials. Some tutorials are conducted on-line, if appropriate.

Coursework may comprise Term Paper, test and short essay.

**Assessment strategy** (assessment of student performance resulting from learning tasks):

Assessment consists of both coursework and final examination.

The short essay/test gives particular problems/issues associated with particular local real estate development schemes. Students have to look beyond the limited information provided in the cases and conduct their own research in solving the problems. This activity is intended to assess Learning Outcomes (2), (3) and (5).

The term paper asks students to apply the theories, concepts and ideas they have learnt in this course to examine the real world situations. Questions are set to enable the students to determine the validity of the theories and give their own conclusions. Coursework assignments are graded primarily on the basis of their contents. Assessment criteria are provided to the students. This activity is to assess Learning Outcomes (1), (4) – (6).

Final closed-book, technical examination comprises essay type questions and is intended to assess Learning outcomes (2) – (6).

**Selected Reading List:**


Subject Code: BRE426
Level: 4
Contact Hours: Lect:21 Sem:10 Lab:11
Student Effort Hours: 120
Assessment Method: Coursework 30% Examination 70%
Credit Value: 3
Pre-requisites: CSE290, BRE302
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: C.H. Yam (BRE)

GEOTECHNICAL AND FOUNDATION ENGINEERING

Subject Aim:
This subject is intended to:
1. Provide students with knowledge of the basic principles of geotechnical engineering and the relation and implications to foundation choices and designs and the ground works needed to be carried out.

Learning Outcomes:
Students will demonstrate their ability to:-
1. Apply the understanding of soil properties, mechanics principles and theories to the behaviour of soils under different kinds of pressures and the effects of water.
2. Relate the importance of safety and geotechnical considerations in designing/undertaking site formation and earth-retaining works.
3. Describe the basics concepts of soil mechanics and its application to analyze soil retaining structures.
4. Illustrate an understanding of modern soil improvement techniques and retaining slopes, soil and excavation techniques.
5. Appraise foundation design concepts in the choice of appropriate foundation and design simple foundations.

Brief Syllabus Content:

Soil Mechanics and Geology:
Shear strength of soil, lateral earth pressure.
Site investigation for deep and complex foundation/basement design and construction, interpretation of borehole log (field and laboratory tests).

Site Formation:
Techniques of excavation and de-watering.

Stability of Slopes and Earth Retaining Structure:
Slope stability, drainage of slopes, ground anchor, slope protection methods. Active and passive lateral earth pressures, analysis and design of soil retaining structures in particular gravity retaining walls, cantilever and anchored sheet pile walls, diaphragm walls, braced or strutted excavation, failure of retaining structure

Foundation Design and Geotechnical Problems:
Ground & soil stabilisation improvement: compaction and pre-compaction, grouting and chemical stablisation, vibratory methods, soil reinforcement and the use of geosynthetics for drainage.

Stresses in subsoil, load bearing capacity and settlement of foundations, rate/magnitude of settlement; factors to be considered in foundation design; pile foundation method and construction process of percussion and bored piles, pile capacity and pile driving formula, plant and equipment for piling, pile testing and Code of Practice.
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Interactive Lectures will enable students to:
1. appreciate basic concepts of soils mechanics;
2. relate geotechnical considerations regarding construction works.
3. apply the soil mechanics concept to analyse slope stability, retaining wall structure and design simple foundations.

Tutorial will enable students to:
1. consolidate the geotechnical and foundation engineering concepts through problem-solving assignments and discussions.

Laboratory will enable students to:
1. identify and appreciate the shear strength and permeability of soils.

Assessment strategy (assessment of student performance resulting from learning tasks):

Assessment comprises of four parts:
1. Problem-solving assignment
2. Laboratory report
3. Mid-term test
4. Final examination

to assess students’ ability to
a. appreciate the basic knowledge in geotechnical engineering and
b. apply the soil mechanics concept to analyse slope stability, retaining wall structure and design simple foundations.

Coursework: 30%
Final Exam.: 70%

Reading List:

Recommended:

Supplementary:
Tomlinson M.J. (1994) Pile design and construction practice, E & FN Spon

Subject Code: BRE427  
Level: 4  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120  

**Assessment Method**  
Coursework 30%  
Examination 70%  

**Credit Value:** 3  

**Pre-requisites:** BRE315 and BRE319  
**Co-requisites:** Nil  
**Exclusions:** Nil  

**Subject Leader/Lecturer/Dept.:** K.F. Man (BRE)  

**Subject Aim:**  
This subject is intended to:  
1. Give to the students an appreciation of the scope of real property investment.  
2. Enable them to apply the techniques available to select suitable investment vehicles for different types of investor under different market conditions.  
3. Enable the students to apply the techniques in business valuation to solve practical problems.  

**Learning Outcomes:**  
Students will demonstrate their ability to:-  
1. Identify and analyse of the investment environment for real estate in Hong Kong, PRC and Overseas.  
2. Recognise the scope of real estate investment in Hong Kong.  
3. Use their knowledge to solve practical problems in real estate investment business and business valuation.  

**Brief Syllabus Content:**  
Rationale of property investment: major investors in real property in the public and private sectors; principal types of real property investment and their characteristics; causes for historical property market cycles, present market trends and projections; direct and indirect investment; securitization such as REIT (real estate investment trust) in the property market; property investment in the People’s Republic of China and overseas.  
The investment decision: sources and manipulation of information; analysis of direct real property investments; comparative investment analysis; returns on investment; risk and uncertainty. Investment psychology.  
Analysis of indirect property investment (business valuation): Open market and notional market; Approaches to value determination: Going Concern approach and Liquidation Value approach; Valuation techniques: asset-based techniques, Income approach and market approach; Market capitalization and discount rates; Goodwill valuation.  

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Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
<table>
<thead>
<tr>
<th><strong>Learning and Teaching Approach</strong> (tasks and activities designed to achieve learning outcomes):</th>
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</thead>
<tbody>
<tr>
<td>Emphasis is made on the application of the investment principles and techniques developed over the past two years to solve actual problems in property investment. Students’ awareness on the investment market, particularly the real estate investment market, will be enhanced. It will be learnt through case studies, problem-solving exercises, presentation etc. Discussion will be facilitated in small tutorial groups. Lectures, seminars, projects and tutorials will form the basic skeleton for learning the subject.</td>
</tr>
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<table>
<thead>
<tr>
<th><strong>Assessment strategy</strong> (assessment of student performance resulting from learning tasks):</th>
</tr>
</thead>
<tbody>
<tr>
<td>Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and presentations. Both examination and coursework assess learning outcomes 1 to 3.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Reading List:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Recommended:</strong></td>
</tr>
<tr>
<td>Brown R. Gerald (2000), Real Estate Investment: a capital market approach</td>
</tr>
<tr>
<td>Hersh Sefrin (2000), Beyond Greed and Fear: understanding behavioural finance and the psychology of investing</td>
</tr>
<tr>
<td>Stowe, Robinson, Pinto and McLeavey (2002), Analysis of Equity Investments: Valuation AIMR</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Supplementary:</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>Graham and Dodd (1962), Security Analysis: principles and technique, 4th edition</td>
</tr>
<tr>
<td>Graham (1973), The Intelligent Investor: a book of practical counsel</td>
</tr>
</tbody>
</table>
Subject Code: BRE4281  
Level: 4  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120

Assessment Method: Coursework: 50%  
Examination: 50%

Credit Value: 3

Pre-requisites: BRE339 or BRE350  
Co-requisites: Nil  
Exclusions: Nil

Subject Leader/Lecturer/Dept.: L.Y. Shen (BRE)  
P.W. Fox (BRE)

**CONSTRUCTION ENGINEERING MANAGEMENT**

**Subject Aim:**

*This subject is intended to:*

Develop the students’ ability to apply decision making theories and operational research techniques in the management of construction projects.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Ability to identity and diagnose management problems accurately and effectively across a wide range of construction engineering activities, including management practices, human resources and plant management, operations, and strategic management.
2. Ability to formulate construction engineering management problems into analytical models.
3. Ability to find out and plan sound solutions from various analytical models by using quantitative (operational research) techniques.

**Brief Syllabus Content:**

- Construction Labour productivity: measurement and analysis
- Construction methods and method statements
- Construction plant management
- Risk management for construction projects
- *Construction Management Practices in the China Mainland Construction Industry*
- Fundamentals of decision theory.
- Application of linear programming in construction project management and process control.
- Decision trees, utility theory and sensitivity analysis.
- Inventory control and transportation theories.
- Monte Carlo simulation and applications.

**Learning and Teaching Approach:**

Student learning will be facilitated through a combination of self-study and class contact sessions. The self-study will include guided reading, library searching skills, problem solving, reflection and textual & graphical communication as individuals and as part of a group. Some assignments will involve the training and development of problem analysis and presentation of results. Class contact will include lectures for providing an overall framework to topic areas and for those areas where textbooks do not provide adequate coverage. Small group sessions will be used for a combination of student-led seminars, role plays and workshop exercises for skill development and the raising of ethical awareness.

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
**Assessment strategy** (assessment of student performance resulting from learning tasks):

Coursework and examination will constitute equal parts of the overall marks of the subject respectively. The coursework mark will be based on role play, seminar discussion, presentation, workshops and problem-based assignments. Marks will be allocated on group and individual basis. Typical assessment criteria include:

- logical structure;
- clarity and depth of thought;
- quality of written presentation;
- knowledge and information;
- problem analysis skills;
- oral and visual presentation skills;
- participation and leadership.

**Reading List:**

**Recommended:**


- Longman Ltd., Ascot, England: Chartered Institute of Building


**Journals:**

- *Asia Engineer: The Journal of the Hong Kong Institution of Engineers* Henderson & Associates

- *Asia Pacific Building and Construction Management Journal*, CIOB (HK), HKIE (Bldg. Div.) & ACMA

- *Australian Institute of Building Papers*, AIB
Journals: (Cont’d)

Construction Management and Economics, Spon

Engineering, Construction and Architectural Management, Blackwell Science

HKIE Transactions, Henderson & Associates

Journal of Construction Engineering & Management, ASCE

International Journal of Construction Management
Subject Code: BRE4291
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method: Coursework 50% Examination 50%
Credit Value: 3
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: H.T. Choy (BRE)

REAL ESTATE MARKETING

Subject Aim:
This subject is intended to:
1. Examine the applications of marketing theories in real estate context.
2. Comprehend marketing practices and regulations in the real estate industry.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Apply marketing theories in the real estate industry.
2. Formulate marketing strategies for both primary and secondary market properties.
3. Evaluate the effectiveness of marketing strategies adopted by real estate marketers.
4. Identify and diagnose the common agency malpractices.
5. Comprehend of the increasingly sophisticated estate agency industry, especially in light of the introduction of regulatory controls.

Brief Syllabus Content:

Real Estate Marketing
Environmental Analysis and Market Segmentation: factors affecting real estate marketing such as the demographic-economic, political-legal, technological-natural and social-cultural environments; identification of target customers; consumer behaviour and the buying process.

Marketing Mix: Product Management – Ansoff Matrix, Growth Share Matrix, product attributes and product life cycle; Pricing Strategies - general pricing approaches, new product pricing strategies, product-mix pricing strategies and price adjustment strategies; Promotion - communication process, media choosing, feedback collection and promotion budget, and Placing Channels: functions of distribution channels, channel behaviour and organisation, channel design and management decisions.

Marketing Plan: research and forecasting, formulation, implementation, control and budgets.

Agency Practices
Estate Agency Industry: functions, structure, organisation, management, business planning and competition.

Agency Services: definition and roles of estate agent, listing properties, advertising, engagement agreement, inspection and viewing of property, negotiation skills, drafting provisional agreement for sale and purchase/tenancy and follow-up works.

Codes of Conducts and Regulatory Controls: malpractices of estate agents, liabilities and indemnity, professional and regulatory controls, estate agent associations, regulatory authorities, licensing and comparative studies to overseas markets.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
### Learning and Teaching Approach
(tasks and activities designed to achieve learning outcomes):

Theories, applications and related regulations will be introduced in lectures, supplemented with case studies, presentations and discussions during seminars. Computer aided packages, mainly through Internet technology, will be provided to students for self-learning purpose.

### Assessment strategy
(assessment of student performance resulting from learning tasks):

Examination and coursework will each constitute 50% of the overall mark for the subject.

**Examination:** (50%) Students are required to sit a two hour examination. The examination will be set to test the applications of marketing theories and the students’ understanding on the market structure of the industry. The students will be asked to critically examine the marketing strategies adopted by real estate developers, agency practices and impacts imposed by the introduction of estate agency regulations.

**Coursework:** (50%) Essay and project type questions supplemented with presentations.

1. will be set to ask the student to formulate marketing plans on conventional as well as innovative real estate products.
2. A computer-aided time constraint assessment will be used to test the student: understanding on the Estate Agency Ordinance and practice regulations.

### Reading List:

**Recommended:**


Consumer Council (1996), *How Competitive is the Private Residential Property Market?*, Hong Kong Consumer Council

HKSAR Government, Estate Agency Ordinance

**Supplementary:**


*Proposed Practising Guidelines for Real Estate Agents* (1995), Society of Hong Kong Real Estate Agents and Hong Kong Real Estate Agencies Association

Subject Code: BRE431
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method:
- Coursework 50%
- Examination 50%

Credit Value: 3
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil

Subject Leader/Lecturer/Dept.: C.M. Hui (BRE)/K.W. Wong (BRE)

HOUSING STUDIES

Subject Aim:

This subject is intended to:

1. Understand housing theories and their applications; examine housing policies, programmes, instruments and organizational arrangements in Hong Kong, the China Mainland and other countries.
2. Consider the implications of housing development in the social-economic context.

Learning Outcomes:

Students will demonstrate their ability to:

1. Apply housing theories and models.
2. Analyse housing policies, programmes, instruments and organisational arrangements in countries at different levels of economic development.
3. Draw out the implications of housing development in Hong Kong and in major cities in the China Mainland.

Brief Syllabus Content:

**Housing Theories & Policies**
Economic models and techniques underlying housing market analysis and their limitations. The broad scale and contents of housing policies in different countries and regions, and the economic rationales for public sector intervention, social and political aspects of housing policies.

**Housing Organisation**
The roles and function of housing suppliers and facilitators, including government, housing authorities, housing associations and other related bodies.

**Housing Programmes and Instruments**
Effective use of various housing programmes including rental housing and housing for sale, and also to understand the housing instruments such as rent rebate and rent certificates.

**Housing Development**
Development of housing in Hong Kong and the China Mainland.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Lectures will be used to introduce theories and models, and seminars will be used for the discussion and understanding of influence of housing policies on socio-economic development. Case studies and comparisons will be used.

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Assessment strategy** (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute 50% each. The coursework and examination assess learning outcomes (1) (2) and (3).

**Reading List:**

**Recommended:**


**Supplementary:**


Hong Kong Housing Authority, (1996-1999) *Hong Kong Housing Authority Annual Reports*, various issues.


Institute of Housing (1991), *Housing Finance*, The Institute of Housing (Services) Ltd.


PROPERTY MANAGEMENT II

Subject Aim:

This subject is intended to:

1. Provide the student with the skills to carry out the efficient maintenance and management of property.
2. Evaluate the role of property management.
3. Evaluate the role of property management in various organizations.

Learning Outcomes:

Students will demonstrate their ability to:

1. Evaluate the concepts, tools and techniques of property management operations.
2. Evaluate the interactions between property different types of stakeholders within the economic and social environment.
3. Apply property management techniques to ensure the efficient use and maintenance of buildings.
4. Possess a knowledge of contemporary issues.

Brief Syllabus Content:

Legal framework of property management: Building Management Ordinance, Landlord and Tenant (Consolidation) Ordinance and Deed of Mutual Covenant.

Financial framework of maintenance and capital expenditure for different types of building works, service and management charge implementation and analysis.

Application of management information systems to property management tasks and the development of property performance measurement systems.

Wherever possible, case studies will be used to illustrate how management principles can be applied into property management practice.
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Teaching will utilize problem based learning approach. Lectures will provide basic concepts to enhance students in future research. Tutorial sessions will be used to underpin and develop the learning established in the lecture by workshops on practical issues and seminars on key themes. Outside speakers will be invited to give talks on current property management practices in Hong Kong as well as other countries.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Examination and coursework will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and presentations.

**Reading List:**

**Recommended:**


RICS (1993) *Economic and Property Cycles*

RICS Guidance Notes: (1995) *Commercial Property Management*

RICS Guidance Notes: (1995) *An Elemental Analysis of Services Charges*


香港地產學會(2001), 物業管理專業手冊, 商務印書館(香港)有限公司

**Supplementary:**


Loo F. (1991) *Property Management in Hong Kong*, HKU


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<td>K.K. Lo (BRE)</td>
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**DESIGN, ADAPTATION AND CONVERSION**

**Subject Aim:**

This subject is intended to:

1. Equip students with the skills necessary to undertake the conversion to existing buildings.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Identify problems and constraints in the course of design for conversion and adaptation work.
2. Apply the knowledge and techniques to extend the useful life and economic return of Hong Kong buildings by means of conversion and adaptation.
3. Understand the concepts of economic and physical obsolescence for buildings for evaluation of their impacts on process of conversion work.
4. Comply with the local statutory requirements in the course of adaptation and conversion to existing buildings.
5. Use the project management and contract administration techniques for conversion and adaptation practice.

**Brief Syllabus Content:**

The design and structural considerations and implications that affect the conversion, improvement and adaptation work on existing buildings in relation to users requirements.

The physical and economical considerations that determine the viability and feasibility of conversion or adaptation of existing buildings.

Relevant legislation controlling the conversion and adaptation work of existing buildings including those of architectural and historical nature.

The special considerations of planning the project management and contract administration for conversion and adaptation work.

Special considerations for the conversion and adaptation work of buildings of architectural and historical interest.

*Teaching activities*: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

The subject involves both theoretical and practical approaches in local context relating to project work and tutorial assignments, such as lectures, seminars, case studies, site visits, criticism of presentations and projects by peer groups and practicing professionals and etc. Some of them will be delivered by prominent professional practitioners.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

The focus of assessment is on the practical skills associated with solving the problems of adapting buildings by integrating the key learning outcomes and will therefore use case studies. The subject will be assessed by 2 pieces of coursework including project work and tutorial assignments. One will be on project basis (70% of coursework) and the other will be on written assignment (30% of coursework).

**Reading List:**

**Recommended :**


**Supplementary:**

Highfield, David (1987), *Rehabilitation and Re-use of Old Buildings*, Spon

Subject Code: BRE436
Level: 4
Contact Hours: LT/SM: 42
Student Effort Hours: 120

Assessment Method:
- Coursework: 50%
- Examination: 50%

Credit Value: 3
Pre-requisites: BRE315
Co-requisites: Nil
Exclusions: Nil

Subject Leader/Lecturer/Dept.: C.H. Lau (BRE)

### Subject Aim:

This subject is intended to:

1. Apply complex valuation problems.
2. Evaluate practical valuation problems taking into account the effects of legislation.
3. Analyse valuation standards of selected overseas countries.

### Learning Outcomes:

Students will demonstrate their ability to:

1. Explore the effects of land administrative measures and land tenure on property value.
2. Apply current legislative measures which affect property value and valuation approaches in resumption, modification and taxation cases.
3. Apply the techniques of valuation to appraise, analyze and solve complex valuation problems in both private and public sectors.
4. Explore the sources of international valuation standards and their importance.
5. Possess a knowledge of contemporary issues.

### Brief Syllabus Content:

Land administrative measures and land tenure in Hong Kong.

Legislation affecting development; Building Ordinance and Building (Planning) Regulations; Town Planning Ordinance; Hong Kong Airport (Control of Obstruction) Ordinance: Density Zones.

Valuation of development land.

Valuation for lease modification; common government lease conditions; procedures and valuation approaches.

Valuation for surrender and regrant of leases: exchange; procedures and valuation approaches.

Valuation for resumption purposes: relevant legislation; principles of compensation; basis of valuation.

Landlord and Tenant (Consolidation) Ordinance: relevant legislation; principles of compensation; basis of valuation.

Valuation for taxation purposes: Stamp Duty; Estate Duty, property tax and rating.

Valuation of specialised properties.

Asset Valuation: purposes; guidance notes issued by professional bodies; relevant regulations and legislation; valuation approaches; contents of report.

Valuation practices of selected overseas countries and international valuation standards.
Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

This subject is aimed at developing the students’ ability to appraise and solve complex, including statutory valuation problems. Lectures will be used to highlight the various valuation approaches and the current statutory provisions affecting development and value of property. Case studies will be employed as illustrations, wherever possible. Tutorials will be used by the lecturer and students to discuss valuation problems and assignments while seminars provide suitable forums for presentation by the students. Senior professionals will be invited from practice to give talks on specific valuation topics and share their experience with the students.

Assessment strategy (assessment of student performance resulting from learning tasks):

Students will be assessed through both coursework and examination.

Coursework will consist of 1 term paper and 2 problem solving assignments in the form of quiz.

Both examination and coursework assess learning outcome 1 to 4.

Reading List:

Recommended:

Cruden, G.N., (1999) Land Compensation and Valuation Law in Hong Kong, Butterworths


Poon, N.T., & Chan, H.W., (1998) Real Estate Development in Hong Kong, PACE

Supplementary:


Hong Kong SAR Government:

- Building Ordinance (Cap 123)
- Land (Miscellaneous Provisions) Ordinance (Cap 28)
- Land Resumption Ordinance (Cap 124)
- Government Leases Ordinance (Cap 40)
- Government Rights (Re-entry and Vesting Remedies) Ordinance (Cap 126)
- Estate Duty Ordinance (Cap 111)
- Hong Kong Airport (Control of Obstruction) Ordinance (Cap 301)
- Landlord and Tenant (Consolidation) Ordinance (Cap 7)
- Lands Tribunal Ordinance (Cap 17)
- Mass Transit Railway (Land Resumption and Related Provisions) Ordinance (Cap 276)
- Rating Ordinance (Cap 116)
- Stamp Duty Ordinance (Cap 117)
- Roads (Works, Use and Compensation) Ordinance (Cap 370)
- Railways Ordinance (Cap 519)
- Land (Compulsory Sale For Redevelopment) Ordinance (Cap 545)
Subject Code: BRE437  
Level: 4  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120  
Assessment Method: Coursework 50% Examination 50%  
Credit Value: 3  
Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: C.Y. Yiu (BRE)  

**FACILITY MANAGEMENT**

**Subject Aim:**

This subject is intended to:

Introducing the concept of facilities management and its application in various organizations. The development of facility management, the challenges and opportunities for facility manager will be examined. Contemporary issues in benchmarking, facility audit, building performance assessment, corporate real estate portfolio management and finance will also be discussed.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Articulate management concepts within a variety of facility contexts.
2. Assess the performance of a real estate facility across a wide range of performance criteria.
3. Assess the performance of a real estate investment portfolio.
4. Analyse the role of a facility manager, and apply key competences of a manager on problem solving and decision making.

**Brief Syllabus Content:**

Basic concepts of facility management – an integrated approach  
The changing workplace – space utilization and intelligent buildings requirements  
Growth of facility management in Hong Kong – portfolios and institutions  
Benchmarking – key performance indicators  
Facility audit and building performance assessment – criteria of assessment, HK-BEAM, IBI, etc.  
Outsourcing – cost and benefit analysis, basic concepts of outsourcing  
Corporate real estate portfolio management – evaluation of real estate performance, decision of acquisition to dis-investment, asset management, real options approach.  
Portfolio selection – Applications of portfolio theory and capital asset pricing model in selecting property portfolio

**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

The programme will consist of formal lectures to introduce the concept and theory of facility management. External speakers will be invited, where possible, to present case studies to illustrate the principles introduced. Students will also be encouraged to participate in project-based tasks to apply concepts and tools introduced.

**Assessment strategy (assessment of student performance resulting from learning tasks):**

Assessment will be based on coursework [50%] and examination [50%].

*Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)*
Reading List:

Recommended:

IFMA, (1999). Outlook on Outsourcing, IFMA, Houston

Supplementary:


Journals for references:

*Facilities*
*Facility Management Journal*
*IFMA News*
*Property Management*
PROPERTY MANAGEMENT PRACTICE

Subject Code: BRE438
Level: 4
Contact Hours: Sem:14 and PW:140
Student Effort: 240
Assessment Method: Coursework 100%
Credit Value: 6
Pre-requisites: BRE348 or equivalent
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: K.H. Wong (BRE) C.H. Lau (BRE)

Subject Aim:

This subject is intended to:

1. Further develop critical investigation skills in solving problems in a professional context.
2. Apply the knowledge gained in different subject areas
3. Evaluate the property management process in multi-disciplinary context.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Formulate the property management strategies in an institutional context.
2. Develop teamwork spirit as an effective approach to tackle a project and problem-solving techniques.
3. Apply property management techniques to ensure the efficient use and maintenance of buildings.
4. Evaluate the property management related contemporary issues.

Brief Syllabus Content:

Further to the integrated projects learnt in previous levels, a series of practice-based or problem-based property management projects will be set to replicate a situation which could be met in practice. The projects will require the students to relate communication skills, housing policy or management issues and integrate knowledge from pervious and current subject modules. Each project will include elements of multi-disciplinary and individual work. Sometimes the restrictions of the study environment will require the above learning arrangements to be modified.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The projects will provide a student centered problem-based learning approach in a professional or industrial setting. Project material will be co-ordinate at the started of each academic year to ensure quality and consistency of the project information given to the students.

Assessment strategy (assessment of student performance resulting from learning tasks):

The subject will be assessed on the coursework projects. Each project will contain tasks such that marks can be awarded for both group work and individual work.

Reading List:

Real Estate and Property Management Journals, Databases, Statistics and Module Texts

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/ Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
Subject Code: BRE439
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120
Assessment Method: Coursework 50% Examination 50%
Credit Value: 3
Pre-requisites: BRE349 or equivalent
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: K.D. Wong (BRE)

Subject Aim:
This subject is intended to:

1. Develop an understanding of the technological, practical, procedural, contractual and economic characteristics of engineering work including building services in building projects and civil engineering work.

Learning Outcomes:

Students will demonstrate their ability to:

1. Possess the knowledge of the technological practices of engineering work.
2. Understand the practices of procurement and contractual arrangements of engineering work.
3. Produce and evaluate the measurement and documentation of engineering work.
4. Appraise and apply the principle and practices of contractual procedures and administration in engineering work.
5. Communicate effectively with contractual negotiation skills.

Brief Syllabus Content:

1. Technological aspects of building services work and civil engineering work.
2. Cost appraisal and cost planning for building services and civil engineering projects.
3. Procurement systems and contractual arrangements for building services and civil engineering projects.
4. Documentation, measurement and valuation of building services and civil engineering work.
5. Contract administration and procedure in building services and civil engineering projects.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

Contract documentation and administration will form the main thrust of the course, to be underpinned on a comprehensive engineering work technologies and practices. Interactive lectures on the various technologies, practice and economic aspects will be conducted with a view of providing the background knowledge necessary for developing competence in documentation, procurement and administration in the field of engineering work. Interactive lecture and case studies will be utilized. Professional practitioners will be invited to facilitate problem based learning on different contract strategies in different projects. Tutorial sections will be provided to conduct systematic in discussions.
Assessment strategy (assessment of student performance resulting from learning tasks):

Examination and coursework will constitute the 50% and 50% of the overall mark for the subject respectively. The coursework mark will be based on the assignments by producing documentation, seminar presentations and discussions. At least two assignments with equal contribution will be set.

The assessment by examination will be based on a 2 hour examination. The coursework will be evaluated on; (i) a basic understanding of engineering work practices, economics of engineering work development, and its impact on the economy; (ii) a working knowledge of the contract documentation and administration of typical engineering work; (iii) a critical appraisal of alternative contract strategies, procedures and administration in engineering work.

Reading List:

Recommended:

Hong Kong Standard Method of Measurement for Building Services.

Barnes, M., (Editor)(1990), Financial Control, Thomas Telford

Supplementary:
Government of Hong Kong, (1988) SMM for Civil Engineering Works, Hong Kong Government Printer
ICE Civil Engineering Standard Method of Measurement 3 Examples

**Subject Code**: BRE440  
**Level**: 3  
**Contact Hours**: 42  
**Student Effort Hours**: 120  
**Assessment Method**: Coursework 50%  
**Examination 50%**  
**Credit Value**: 3  
**Pre-requisites**: BRE347 or equivalent  
**Co-requisites**: NIL  
**Exclusions**: NIL  
**Subject Leader/Lecturer/Dept.**: Q.P. Shen (BRE)  
S.W. Fong (BRE)

### Subject Aim:

This subject is intended to:

- Focus on both theories and applications of value management in different phases of a development,
- Develop an appreciation for what can be accomplished using the techniques of VM and applied creativity, and
- Identify management and technical issues that can be solved or addressed using the techniques of VM and critical thinking.

### Learning Outcomes:

Students will demonstrate their ability to:-

1. Have an understanding of the value management methodology
2. Organize and manage value management workshops in different phases of a project life cycle
3. Conduct function analysis and life-cycle costing for a project or a part of a project
4. Exercise practical creativity skills to work with a team of stakeholders to arrive at innovative solutions for construction projects
5. Ensure value for money for projects by applying value management tools in business situation or technical situations of a construction company

### Brief Syllabus Content:

Notion of value:- value, function and cost.

Value management basics:- historical development; project selection (types, values, and timing); alternative workshop approaches (e.g. the 40-hour job plan, the Charette, the VM audit, and the contractor's change proposal).

Value management methodology: - VM job plan (information, analysis, creativity, evaluation, development, proposal); function analysis, group dynamics, creativity, and problem-solving skills

Life cycle costing for construction projects

Comparison of value management and traditional cost management techniques.

Case studies of the practice of value management in Hong Kong and overseas.

### Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The class will be conducted through a combination of lectures, student discussions, group and individual exercises, and active student participation. Students will be called on to make classroom presentations. The class distribution will be approximately as shown below. The lectures form the core instructional material supported by directed reading, assignments, student exercises, and other course elements. Significant work is programmed to be accomplished by the students in project teams when working on a study. Students are expected to meet regularly outside of formal class meetings to pursue and develop the ability to work with teams.

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Assessment strategy (assessment of student performance resulting from learning tasks):

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<th>Coursework</th>
<th>Examination</th>
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<tr>
<td></td>
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Reading List:

Recommended:


Institution of Civil Engineers (1996), *Creating Value in Engineering*, Thomas Telford.


Supplementary:


PROFESSIONAL STUDIES

Subject Aim:

This subject is intended to:

1. Encourage critical investigation, analysis and synthesis in solving problems in the surveying professional context. It provides an environment for the student to develop skills in identifying and solving problems and allows the integration of knowledge gained in separate subject areas. It promotes the students’ understanding of interdisciplinary nature of the development process and develops team working.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Understand the major issues involved in the development process for application and compliance.
2. Appropriate the value of teamwork as an approach to tackle a project and problem-solving.
3. Integrate knowledge and skills acquired in various subject areas and to solve problems in the surveying professional context.

Brief Syllabus Content:

A series of property related project scenarios will be set to replicate a situation which could be met in practice. Sometimes the restrictions of the study environment will require the scenario to be modified. The projects will require the students to make use of and integrate knowledge learnt from previous and current subject modules. Each project will include an element of group and individual work gears towards surveying professional disciplines. The projects require students to develop solutions creatively and to present recommendations systematically.

Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):

The projects will provide a student centered problem-based learning approach in a professional or industrial setting. The projects will be delivered by a team of project tutors together with visiting lecturers who are practising professionals in the fields, with overall co-ordination by one member of staff to ensure continuity and relevance of project subject matter. Project material will be co-ordinated at the start of each academic year to ensure quality and consistency of the project information given to the students.

This subject will be timetabled one day per week for project work at studio and consists of 28-week activities throughout 2 semesters.

Assessment strategy (assessment of student performance resulting from learning tasks):

The subject will be assessed on the coursework projects. Each project will contain tasks such that marks can be awarded 50% group work and 50% individual work.

Reading List:

Construction Journals, Databases, Statistics and Module Texts

Teaching activities: Lecture (LT)/Tutorial (TU)/Seminar (SM)/Drawing (DW)/Laboratory or Practical (LB)/Studio (ST)/Workshop (WS)/Project (PJ)/Field Study (FS)/Guided Study (GS)/Visit (VS)
FORECASTING & COMPETITION IN THE BUILT ENVIRONMENT

**Subject Aim:**

*This subject is intended to:*

1. Help students acquire the knowledge and skills to forecast and compete for work in the built environment.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Select and employ appropriate techniques in price forecasting and strategies for improving survival and profitability.
2. Recognise the usefulness and limitations of competition and forecasting models.
3. Integrate risk management techniques with competition and forecasting models.
4. Analyse competitive performance and forecasting accuracy.
5. Draw conclusions and make recommendations on improving competitive performance and forecasting accuracy.

**Brief Syllabus Content:**

**Competition**

Auction theory: relationship between construction contract bidding, competitive fee bidding and land auctions.

Strategic management and competitive advantage: diversification; international contracting.

The competitive environment competition processes: level of competition; market conditions: survival and profitability; competitor analysis, decision to compete; pricing policy; competition strategy; risk in competing.

Monitoring competition performance: competitiveness and consistency in competing for construction contracts; market share and competitiveness.

Strategies for improving competitive advantage; subcontractor selection strategies.

Client objectives: negotiation; competitor prequalification, competition assessment, and award of contract.

Strategies for improving competitor prequalification.

**Forecasting**

Relationship between competition, bidding and forecasting

Designers’ and contractors’ approaches to forecasting; resume of forecasting techniques; deterministic and non-deterministic approaches to forecasting; risk in forecasting.

Accuracy and reliability of forecasts: factors affecting accuracy of forecasts; feedback in forecasting.
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Lectures introduce the key issues followed by discussion on background reading and/or problem-solving sessions in the seminar. The problem-solving sessions will, in the main, consist of the analysis of data taken from construction projects, making decisions, drawing conclusions and making recommendations through the medium of report writing.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

Examination and coursework will each constitute 40% and 60% of the overall mark for the subject respectively.

The coursework grade will comprise two assignments. One coursework will be more practical in nature. The students will be given background information relating to a particular construction project and/or construction firm. They will be required to produce a forecast and/or bid price, justifying how they arrived at the forecast/bid price.

The other coursework will be more theoretical whereby students will be given an open ended question to discuss. An important part of this coursework will be that the students undertake the necessary background reading relating to the question and use the literature to support their argument.

The first piece of coursework may be undertaken on a group or individual basis. The second piece of coursework will be undertaken on an individual basis.

**Reading List:**

**Recommended:**


Subject Code: BRE453
Level: 4
Contact Hours: 42
Student Effort Hours: Lect:28 Tut/Sem:14

Assessment Method:
- Coursework: 30%
- Examination: 70%

Credit Value: 3

Pre-requisites: BRE303 or 392
Co-requisites: Nil
Exclusions: Nil

Subject Leader/Lecturer/Dept.: (BRE)

**BUILDING SERVICES II**

**Subject Aim:**

This subject is intended to:

1. Provide further knowledge of building services engineering systems and an understanding of the importance of the quality of installation and proper co-ordination on the overall performance and maintainability of buildings.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Attend to details in respect of fixtures, fittings and finishes on the performance and maintainability of systems.
2. Be able to properly co-ordinate the installation requirements of the building services equipment, especially with regard to management of sub-contractors work.
3. Understand the various commissioning processes, and the impact on building performance.
4. Understand the importance of maintenance to building services systems and its impact to the life-cycle-cost and methods to devise sound maintenance plans for building services systems.

**Syllabus Content:**


Building services engineering system for intelligent buildings: introduction to information transmission systems, communication and protection system, call systems, public address system and Building automation/management systems.

The concepts and importance of energy conservation and energy efficiency for environmental protection, environmental protection and maintenance of building services systems, selection of environmentally friendly products and materials used in building services systems.

Co-ordination and management of design and installation of various building services systems during the design and construction stages in particular the builder’s works.

Computer-aided design and installations of building services.

Testing and commissioning of building services systems: fire safety systems, vertical transportation equipment ventilation systems, etc.

Sick building syndrome.

The impacts of life-cycle-cost on planning and implementation.
An appreciation of capital and operating costs. Implication of low cost inefficient equipment, poor installation, inadequate access for maintenance.
Learning and Teaching Approach:

The subject can be divided into three main parts; introduction to complex building services systems, management and co-ordination of the design and installation of building services systems, and maintenance management for building services systems.

A “case oriented” approach is to be adopted for teaching the subject; A number of up-to-date case studies on building services systems of high-rise buildings are used to illustrate the current state-of-the-art on the design and operation of complex building service systems. Practitioners from the industries will be invited to present lecture on the management of the building services installations and on operation and maintenance of building services systems.

The subject will be delivered through lectures, laboratories and small groups tutorials. The lectures and laboratories aim at introducing theories, concepts and practicals whereas tutorials are for in-depth small group discussions.

Assessment:

Examination and coursework will contribute 70% and 30% of the overall mark for the subject respectively. One of the assignments will be in the form of case study; students will be asked to carry out a critical investigation of the building services systems of a building of their choice and to comment on the systems adopted, the installation and integration with other systems. Another assignment will be an essay on the management side of the module.

Reading List:

Recommended:


Barton P.K. (1983) Building Services Integration, E & F.N. Spon

CIBSE (1994) Building Services Maintenance Management, CIBSE

Supplementary:


Subject Code: BRE499
Level: 4
Contact Hours: L/T 22.5
Guided Study & PW: 184
Student Effort Hours: 320
Assessment Method: Coursework 100%
Credit Value: 8
Pre-requisites: Level 3 core subjects
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: BRE Scheme

<table>
<thead>
<tr>
<th>Learning Outcomes:</th>
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<tbody>
<tr>
<td><strong>Students will demonstrate their ability to:</strong></td>
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<tr>
<td>1. Produce a dissertation research proposal with researchable topic related to the field of construction and real estate, appropriate research method, and a display of literature review.</td>
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<tr>
<td>2. To complete a research leading to a dissertation.</td>
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</table>

| Notes: | ‘Research Methods’ is a major component leading to the learning and completion of Dissertation. Students **must complete** (i) all the assignments and tests of research methods and (ii) Dissertation on the prescribed submission date and **pass** both components i.e. Research Methods and Dissertation. |

<table>
<thead>
<tr>
<th>Research Methods: Brief Syllabus Content</th>
<th></th>
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</thead>
<tbody>
<tr>
<td>A. Concepts: Philosophy of sciences, theory, hypothesis, methodology, method, research objective, problem statement, classification of research, etc.</td>
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<tr>
<td>B. Process: Literature search and review, referencing and plagiarism, work plan, authorship skills, data assembly, time management, writing up, etc.</td>
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<tr>
<td>C. Qualitative research: strategy, approaches, methods, analysis, examples, limitations, etc.</td>
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<tr>
<td>D. Quantitative techniques: such as descriptive statistics, hypothesis testing, correlation and regression analysis, Analytic Hierarchy Process, Expected Value Model, and use of computer software to handle statistical problems, etc. <em>(Remarks: Students are expected to learn these techniques in more details and many other relevant quantitative techniques by their own initiatives.)</em></td>
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<tr>
<td>E. Writing out a dissertation proposal.</td>
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<table>
<thead>
<tr>
<th>Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):</th>
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<tbody>
<tr>
<td>Lectures will be used to present concepts and principles of the various subject areas. Tutorial sessions will be used for discussion, problems solving and hands-on experience. Students are expected to discuss at tutorials with tutor(s.) and complete written assignments. They will receive feedback from the tutor(s).</td>
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</table>

<table>
<thead>
<tr>
<th>Dissertation Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):</th>
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<tbody>
<tr>
<td>Academic leadership for the Dissertation is provided by the Dissertation Co-ordinator assisted by the supervisors who are BRE academic staff with research experience.</td>
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</tr>
<tr>
<td>Students will identify a topic in the field of construction and real estate to study in depth in the final year. The Dissertations are grouped into a number of study areas within the research theme of the Department such as real estate investment and finance, land and construction economics, construction management and construction technology and science.</td>
<td></td>
</tr>
<tr>
<td>For BEM students will be advised to identify a topic in the field of Building Engineering and Management to study in depth in the final year. The topic should be engineering-oriented or engineering related area in construction. The Dissertations are grouped into a number of study areas within the research themes of the Department such as construction technology and science, production engineering, production &amp; contract management, engineering economics, construction quality in engineering works, application of information technology in the building industry, engineering materials, etc.</td>
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</tbody>
</table>
Occasionally, if a student proposes a topic which is not within the context of engineering orientation, consideration and prior approval need to be sought from the BEM Programme Management Team.

Each student will work under the guidance of a supervisor and, if necessary, a second supervisor may be appointed to assist in project supervision. The project supervision is timetabled for one hour per two weeks over the final year, but students are expected to devote about a day per week of their own time to carry out study and research work.

**Students are encouraged to formulate a testable hypothesis with theoretical model or justifications; carry out an empirical test on the hypothesis; and draw inference(s) on research and practical implications from the findings.**

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**Research Methods Coursework Assessment strategy (assessment of student performance resulting from learning tasks):**

The coursework mark will be based on short tests, assignments, seminar and discussion. The approach to coursework assessment is guided by two principles. First, the need to assess the extent to which the students have achieved the learning outcomes with respect to grading criteria. Second, the assessment itself should contribute in some way towards reflection and learning of the importance of research methods in Dissertation.

Half of the total coursework mark will be devoted to qualitative research methods (i.e. literature review and dissertation proposal). The other half will be based on quantitative (statistical) approaches (i.e. an empirical test on a hypothesis).

**Dissertation Assessment strategy (assessment of student performance resulting from learning tasks):**

The assessment of the Dissertation is based on students’ ability to develop and demonstrate the following attributes:-

(a) to critically evaluate information;
(b) to take personal initiative and to think independently;
(c) to be able to identify the scope and limitation of collected data;
(d) to make value judgements; and
(e) to communicate clearly an argument and draw logical and substantiative conclusions.

The details of assessment procedures are outlined in Guidance notes for the presentation of the Final Year Dissertation.

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**Reference List:**

**Essential:**


HKPU Building and Real Estate Department (1999) *Guidance Notes for the Presentation of Final Year Dissertation*, HKPU, BRE


Lucey T. (1992) *Quantitative Techniques ELBS*


Leung, A.Y.T. and Yiu, C.Y. (eds), *Building Dilapidation and Rejuvenation in Hong Kong*, Hong Kong: Joint Imprint of CityU Press and the Hong Kong Institute of Surveyors.


**Recommended:**


MS Excel Reference Manual


Mustafa, M.A. and Ryan, T.C. (1990), Decision Support for Bid Evaluation, Project Management, 8(4), 230-235


SPSS/PC Reference Manual

EViews 4.0 User’s Guide
MANAGING HUMAN SERVICES IN CHANGING CONTEXT

Subject Code: APSS406
Level: 4
Contact Hours: Lect:28 Sem:14
Student Effort Hours: 120
Assessment Method: Coursework 100%
Credit Value: 3
Pre-requisites: Nil
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: (APSS)

Subject Aim:
The subject is intended to:
The subject will equip students with key concepts and skills in Managing human service organizations in a rapidly changing social Context.

Learning Outcomes:
Students will demonstrate their ability to:-
1. to appreciate the diversity in the local and global contexts and identify their implication in the practice of social policy and administration.
2. to identify and articulate key concepts and skills in managing human service organizations in a rapidly changing context.

Syllabus Content:
1. contemporary issues in human service programme planning and evaluation
2. the crisis globalization
3. capitalism and equity
4. managerialism and public services
5. sustainable growth and human services
6. leadership in a changing environment
7. surviving the privatization regime
8. public sector reform and Civil Service Reform
9. current debates in health care reform and education reform
10. financial sufficiency
11. marketing
12. service quality, performance, & outcome measurement
13. human capital and social capital
14. managing with integrity

Assessment strategy (assessment of student performance resulting from learning tasks):
Coursework will be assessed according to students’ participation, seminar presentation, and seminar report and term paper.
Reading List:

Essential


Supplementary


<table>
<thead>
<tr>
<th>Subject Code</th>
<th>APSS409</th>
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</thead>
<tbody>
<tr>
<td>Level</td>
<td>4</td>
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<td>Pre-requisites</td>
<td>Nil</td>
</tr>
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<td>Nil</td>
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<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>(APSS)</td>
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</tbody>
</table>

### HEALTH POLICY AND ADMINISTRATION

#### Subject Aim:

*The subject is intended to:*

The objective of this subject is to equip students with essential knowledge and concepts of health and the multifaceted relationships between health policy and health care administration. The subject also sensitizes students about political, social, cultural and economic factors which contribute to the development of health policy and health care administration in Hong Kong.

#### Learning Outcomes:

*Students will demonstrate their ability to:*

1. **DEMONSTRATE** an understanding on the holistic concept of health and its determinants.
2. **ANALYSE** health care policies in terms of different theoretical perspectives
3. **CRITIQUE** on local health care system and financing strategies
4. **ARTICULATE** the administrative dynamics and complexity in health care settings

#### Syllabus Content:

1. **Concepts of Health and Health Care**
   - Holistic concepts of health and health care
   - Biomedical Model and the limits of medicine
   - Determinants of health (Individual attributes, social and environmental factors, cultural influence)

2. **Health Policy Analysis**
   - Policy objectives and principles to be upheld (Equity, Quality, Choice, Cost-effectiveness)
   - The role of government in health care policies and administration.

3. **Health Care Systems and Financing**
   - An overview of major health care systems and financing options in developed countries
   - Health care system in Hong Kong

4. **Health Service Administration and Service Delivery**
   - Organization and delivery of health care services at primary, secondary and tertiary care settings
   - Administration and management of health care organizations
   - Quality assurance of health care services such as accreditation and peer review

5. **Current Issues and Debate in Hong Kong**
   - Health care policy and administrative reforms
   - Interfacing between medical and social services for the elderly and persons with chronic illness
   - Integration of Western Medicine and Traditional Chinese Medicine
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

In addition to formal lectures delivered by the subject teacher, other teaching methods such as small group discussion, reflective exercise and case demonstration will be included to involve students’ participation for effective learning in class. Whenever appropriate, audio-visual materials will also be used to facilitate students’ learning. Students will make a presentation in small group on a group project. The seminar teacher will give guidance, feedback, and comments to the students involved during the entire process.

**Assessment strategy** *(assessment of student performance resulting from learning tasks):*

This subject adopts 100% continuous assessment on the following components:

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
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<tbody>
<tr>
<td>Group Project Presentation</td>
<td>30%</td>
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<tr>
<td>Seminar Participation</td>
<td>20%</td>
</tr>
<tr>
<td>Individual Term paper</td>
<td>50%</td>
</tr>
</tbody>
</table>

**Reading List:**

**Essential**


**Supplementary**

Gauld R.D.C. 1996. “Revolution or evolution in health sector restructuring? The experiences of New Zealand and Hong Kong” in *Hong Kong Public Administration*, 5,2, September, pp 87-104.


Local Policy Documents:


Web-sites

http://www.ha.org.hk (Hong Kong Hospital Authority)
http://www.who.int (World Health Organization website)
http://www.cmchk.org.hk (Chinese Medicine Council of Hong Kong)