Part-Time Degree Scheme

For Student Intake 2003/2004

BSc (Hons) Degrees

in

Building Engineering & Management (32102-BEM)
Building Surveying (32101-BS)
Construction Economics & Management (32100-CEM)
Real Estate (32099-RE)

September 2003
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Part-time Degree Scheme

1. GENERAL INFORMATION

University : The Hong Kong Polytechnic University (PolyU)
Faculty : Faculty of Construction and Land Use (FCLU)
Host Department : Department of Building and Real Estate (BRE)
Programme : BSc (Hons) in Building Engineering & Management (BEM)
BSc (Hons) in Building Surveying (BS)
BSc (Hons) in Construction Economics & Management (CEM)
BSc (Hons) in Real Estate (RE)
Duration : Four Years normally
Eight years maximum
Mode of Attendance : Part-time (evenings)
System : Credit-based System (CbS)

The Department of Building and Real Estate, under the Faculty of Construction and Land Use is the host department for these programmes. Other departments and centres within the University that contribute to the programmes are the English Language Centre (ELC) and the Industrial Centre (IC). The Department operates its academic programmes using the Credit-based System. Each programme comprises a number of subjects, expressed in credits. All programmes are upon based University academic year. Under the Credit-based System, an academic year consists of three semesters: Semester 1, Semester 2 and the summer semester. For Semesters 1 & 2, each of which usually consists of 14 weeks and followed by examination period. Reassessments are normally arranged 2 weeks after the finalization of examinations results of semester 2. Between these two semesters, there is a semester break. Summer Semester is of 7-week duration and usually begins in June.

2. CREDIT REQUIREMENT AND DURATION

2.1 There are a defined number of credits for each programme of which students have to register for each semester in accordance with the programme curriculum.

2.2 Students of any programmes are not allowed to have nil subject registration in any semester (except summer semester) unless they have obtained approval from the Department. The legitimate reasons for nil subject enrolment must be provided for the consideration of the Department. Any semester in which a student is allowed to take nil subjects will be counted towards the maximum period of registration.

2.3 A student is required to register for a programme at the time of admission. The graduation requirement for each programme is stipulated in the programme curriculum with a normal duration of 4 years (part-time) and a maximum duration for completion of 8 years. All of which studies should be within the semester of the academic year.
3. PROGRESSION PATTERN

3.1 There is a specified progression pattern and curriculum for each academic programme. Notwithstanding any alterations, which the Department may consider necessary, students are expected to follow the progression pattern and curriculum unless special approval has been granted. **Section 9 PROGRESSION PATTERNS** contain details of the prescribed progression pattern for each of the four programmes under this Part-time Degree Scheme.

3.2 Students may apply for deferment of study if they have a genuine need to do so, such as illness or an overseas business trip. Approval from the Scheme Chair and Programme Leader are required. The deferment period will not be counted as part of the maximum period of registration.

4. PROGRAMME MANAGEMENT

4.1 Programme Committee

Chairman: Scheme Chair  
Members:  
- Head, Department of Building and Real Estate (ex-officio)  
- Programme Leaders  
- Deputy Programme Leaders  
- Programme Tutors  
- Subject Leaders  
- Two student representatives from each level of the 4 Part-time BSc (Hons) programmes (except where confidentiality is involved) and  
- Co-opted additional members from contributing departments  
Secretary: Departmental Executive Officer

The Programme Committee is responsible to the Faculty Board for the management of its programme, which includes:

(a) Ensuring that the Programme is implemented properly;  
(b) Recommending to the Heads of the host and contributing departments the resources required to implement the programme;  
(c) Reviewing programme objectives and resources allocation requirements;  
(d) Reviewing the progress of students and the teaching and learning activities and solve any problems arising therefrom;  
(e) Reviewing academic regulations, admissions policy, and assessment methods;  
(f) Consulting students from time to time.

4.2 Programme Management Group

The Programme Management Group is given the responsibility to monitor and control the running of the programme. The Group comprises the Programme Leader and Programme Tutors. The Group meets three or four times a year to consider the progress of the students as well as receiving comments from the various subject leaders on proposed changes to the programme.

4.3 Head/Student Liaison Group

A Head/Student Liaison Group, made up of the Head of Department and two student representatives from each level of the programme, meets twice a year to discuss issues of concern. This Liaison Group provides a forum for full and frank exchanges of view.
4.4 **Staff/Student Liaison Group**

The Student/Staff Liaison Group, made up of two student representatives from each level of the programme, the Programme Tutors, and the Programme Leader, meets twice a year to discuss such issues as student workload, teaching methods and the relevance of the materials taught. This Liaison Group provides a forum for the full and frank exchange of views between staff and students.

4.5 **Programme Leader**

The Programme Leader is responsible for the day-to-day management of a particular programme and provides academic and organisational leadership for that programme through the Programme Committee and Programme Management Group. Programme Tutors assist the Programme Leader.

4.6 **Programme Tutor**

A Programme Tutor is involved in the teaching of the Programme and assists the Programme Leader in the day to day operation of the programme. Programme Tutors are required to monitor students’ progress, to co-ordinate and monitor students’ workload, and to report to the Programme Leader, students whose progress in either attendance or coursework is not satisfactory. An additional function is to assist students in solving personal problems with the help of the Student Affairs Office.

5. **SUBJECT MANAGEMENT**

5.1 **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 designated as the Subject Leader responsible for the development of the subject and for co-ordinating the activities of the lecturers involved.

5.2 **Subject Syllabus**

Syllabus details, are provided in *Section 10 SUBJECT PORTFOLIO*. Each subject has an allocated credit value (the standard value is 3 credits) and, in terms of effort, a student is expected to do 40 hours of study to earn a credit.

5.3 **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 offering the subject, and in this case it is the Department of Building & Real Estate; “2” indicating that it is a level 2 subject, and “01” indicating 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 some sub-degree or master programmes, whilst level 5 subjects may be included as elective subjects in some undergraduate degree programmes (the latter is restricted to a maximum of 9 credits).

5.4 Requisites and 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.

5.5 Credit Transfer and Exemption

5.5.1 Credit Transfer will be given credits for recognized previous study, which will count towards the award requirement. University policy stipulates that not more than 50% of the required number of credits for the academic award may be transferable from approved institutions outside the University, and not more than 67% of the required credits for the award can be transferred from programmes within the University. However, for the four part-time programmes covered by this scheme, there is the additional stipulation that no more than 18 credits in total may be transferred from other programmes either inside or outside of the University. The reason for this stipulation is in order to comply with the requirement of the professional bodies that students on a part-time degree programme basis should study at least 50% of the subjects studied by their full-time counterparts.

5.5.2 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.

6. ASSESSMENT

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

6.1 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.

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

6.2 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 before submission to the Board of Examiners. The SARP is also responsible for decisions relating to re-assessment matters.
Composition of the SARP is as follows:
Chairman:  Head, Department of Building and Real Estate
Members:  Programme Leaders
Subject Leaders/Lecturers
Representative from Contributing Departments (Co-opted Members)
Departmental Academic Advisor and/or External Examiners
Secretary:  Departmental Executive Officer

6.3 Grading

At the end of each semester students will be informed of the grade achieved for each subject. The description and grade point corresponding to each grade are as follows:

<table>
<thead>
<tr>
<th>Grade</th>
<th>Short Description</th>
<th>Description</th>
<th>Grade Point</th>
<th>Distribution</th>
</tr>
</thead>
<tbody>
<tr>
<td>A+</td>
<td>Excellent</td>
<td>The student's work is of a standard rarely seen. It covers the necessary material and goes beyond it; it is accurate and entirely clear.</td>
<td>4.5</td>
<td>10 – 20%</td>
</tr>
<tr>
<td>A</td>
<td>Excellent</td>
<td>The student's work is of a very high standard. All the necessary material is thoroughly covered; it is accurate and clear.</td>
<td>4</td>
<td></td>
</tr>
<tr>
<td>B+</td>
<td>Good</td>
<td>The student's work is above the average level for this subject. It is comprehensive, accurate &amp; clear.</td>
<td>3.5</td>
<td>25 – 40%</td>
</tr>
<tr>
<td>B</td>
<td>Good</td>
<td>The student's work is mainly at the average level for this subject and in some aspects goes beyond the average.</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>C+</td>
<td>Satisfactory</td>
<td>The student's work is mainly at the average level for this subject although in some aspects it falls below the average.</td>
<td>2.5</td>
<td>25 – 40%</td>
</tr>
<tr>
<td>C</td>
<td>Satisfactory</td>
<td>The student's work is below the average level for this subject. It is not comprehensive, and only partly accurate or clear.</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>D+</td>
<td>Marginal</td>
<td>The student's work is well below the average for this subject and only just above the minimum acceptable level for the subject.</td>
<td>1.5</td>
<td>10 – 20%</td>
</tr>
<tr>
<td>D</td>
<td>Marginal</td>
<td>The student's work is at the lowest possible level that could receive a passing grade for the subject.</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>F</td>
<td>Failure</td>
<td>The student's work in the subject is unacceptable.</td>
<td>0</td>
<td>0 – 10%</td>
</tr>
</tbody>
</table>

Subject pass 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, a Grade Point Average (GPA) is computed using the following formula where “n” is the total number of subjects taken by the student up to and including the latest semester.

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

Failed subjects are included in the GPA calculation, but 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 calculation. The GPA is the unweighted cumulative average calculated for all subjects taken by a student from the start of the programme to a particular reference point in time. GPA is an indicator of overall performance and is capped at 4.0.
6.4  Re-assessment

6.4.1  Students may be re-assessed for marginally failed subjects. Re-assessment is intended to provide an opportunity for a student to remedy an identified weakness after a period of further study. The maximum number of subjects that may be re-assessed is 2 per academic year. The Board of Examiners will consider cases that exceed this maximum number. The provision of a re-assessment option will be at the discretion of the Subject Assessment Review Panel (SARP). Grade “D” is the maximum grade that may be awarded after re-assessment.

6.4.2  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. In the cases of illness, the student will be required to a medical certificate.

6.4.3  Re-assessment for both Semester 1 and 2 subjects shall normally take place at a specified period after the end of Semester 2 but before the commencement of the next academic year.

6.5  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.

7.  BOARD OF EXAMINERS

7.1  Responsibilities

The 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;
c)  Cases with extenuating circumstance; and
d)  Cases exceeding the maximum number of re-assessed subjects.

The 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 require the approval of the Faculty Board and the Academic Regulations Committee and 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.

7.2  Membership

The Head of Department proposes the Board of Examiners, which is endorsed by the Faculty Dean. The composition of the Board is as follows:

Chairman:  Head, Department of Building and Real Estate
Members:  The Programme Leader
          Programme Tutors
          Departmental Academic Advisor and/or External Examiners
Secretary:  Departmental Executive Officer
7.3 **Appeals**

Appeals against the decision of the Board of Examiners must be made within 5 days after the public announcement of the examination results. A student should make the appeal 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.

8. **PROGRESSION AND AWARD**

8.1 **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) Having 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) Having a Grade Point Average lower than 2.0 for three consecutive semesters.

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

8.2 **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; 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.

8.3 **Guidelines for Award Classification**

The following are guidelines for the Boards of Examiners when 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</th>
<th>Indicative Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>1st</td>
<td>Distinction</td>
<td>The student’s performance 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>
<td>0-10%</td>
</tr>
<tr>
<td>2:1</td>
<td>Credit</td>
<td>The student has reached a standard of performance, which is more than satisfactory but less than outstanding.</td>
<td>3.2 + to 3.7-</td>
<td>20-45%</td>
</tr>
<tr>
<td>2:ii</td>
<td>Pass</td>
<td>The student has reached a standard of performance judged to be satisfactory, and clearly higher than the “essential minimum” required for graduation.</td>
<td>2.3+ to 3.2-</td>
<td>45-75%</td>
</tr>
<tr>
<td>3rd</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>
<td>45-75%</td>
</tr>
</tbody>
</table>
9. PROGRESSION PATTERNS
As at 26/1/2004, commencement of Semester 2, students of BSc (Hons) in Building Engineering & Management are to learn BRE322 Research Methods instead of BRE340 Quantitative Analysis.

**PROGRESSION PATTERN**

**BSc (Hons) in Building Engineering & Management 32102**

*Unless otherwise specified, subjects are compulsory and carry 3 credits*

**YEAR 1 [September 2003]**

**Semester One**
- BRE391 Construction Technology II
- BRE212 Construction Materials
- CSE290 Introduction to Geotechnology

**Semester Two**
- BRE338 Construction Law
- BRE392 Building Services I
- IC302 Industrial Safety II (2 credits)

**YEAR 2 [September 2004]**
- BRE339 Construction and Project Management
- BRE302 Structure II
- BRE393 Temporary Work Design

**Semester Two**
- BRE324 Engineering Economics
- BRE394 Construction Engineering Project & Seminar
- ELC304 English in the Workplace

**YEAR 3 [September 2005]**

**Semester One**
- BRE310 Measurement and Estimating
- BRE401 Construction Technology III
- BRE405 Project Evaluation & Development (6 credits in 2 semesters)

**Semester Two**
- *BRE340 Quantitative Analysis
- BRE405 Project Evaluation & Development (6 credits in 2 semesters)
- BSE453 Building Services II

**YEAR 4 [September 2006]**

**Semester One**
- BRE491 Dissertation (6 credits in 2 semesters)
- BRE428 Construction Engineering Management
- BRE426 Geotechnical & Foundation Engineering

**Semester Two**
- BRE491 Dissertation (6 credits in 2 semesters)

**ELECTIVE 2 Elective Subjects**
- BRE433 Management for Project Development Process in Mainland China
- BRE434 Maintenance Technology and The Built Environment
- BRE430 Bidding, Forecasting and Cost Control
- BSE332 Fire Services
- CSE431 Environmental Management and Impact Assessment
- BRE416 Computerization of Construction Production & Management

Total credits = 71
PROGRESSION PATTERN

BSc (Hons) in Building Surveying 32101

Unless otherwise specified, subjects are compulsory and carry 3 credits

YEAR 1 [September 2003]
Semester One
BRE391  Construction Technology II
BRE208  Land Development Studies
BRE337  Property Law
Semester Two
BRE326  Maintenance Technology and Management
BRE335  Procurement and Contracts
BRE392  Building Services I

YEAR 2 [September 2004]
Semester One
BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
BRE336  Development Control Law
IC301  Industrial Safety I (1 credit)
AND
BRE339#  Construction and Project Management (Elective 1)  ) Select either ONE
BRE341#  Property Management I (Elective 1)  
Semester Two
BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
ELC304  English in the Workplace
AND
BRE319*  Property Investment and Finance (C Elective)  ) Select either ONE
BRE333*  Land and Construction Economics (C Elective)  

YEAR 3 [September 2005]
Semester One
BRE423  Professional Studies III (6 credits in 2 semesters)
BRE401##  Construction Technology III (Elective) (Select either BRE401 in S.1 or BRE432 in S.2)
BRE434  Maintenance Technology and The Built Environment
BRE341#  (Refer to Note)
Semester Two
BRE423  Professional Studies III (6 credits in 2 semesters)
BRE435  Design Adaptation and Conversion
BRE322  Research Methods
BRE432## Property Management II (Elective) (Select either BRE401 in S.1 or BRE432 in S.2)

YEAR 4 [September 2006]
Semester One
BRE406  Dissertation (6 credits in 2 semesters)
Elective  Two from elective subjects
Semester Two
BRE406  Dissertation (6 credits in 2 semesters)
BRE437  Facility Management
Elective Subjects  (Complete 2 electives)
BRE302  Structure II
BRE339#  Construction & Project Management
BRE427  Applied Property Investment
BRE408  Civil Engineering Practical Contract Procedure
BRE433  Management for Project Development Process in Mainland China
BRE409  Strategic Management of Complex Projects
BRE431  Housing Studies

Note: Students who have completed BRE339 in their Year 2 S.1 may take BRE341 as an elective in Year 3 S.1 if they wish to take BRE432 in Yr.3 S.2. They should then take only one elective subject in Yr.4 S1.

Remarks:
Students are also required to complete CLC201, CLC211 and one General Education subject. Details to be informed.

Total credits = 79
PROGRESSION PATTERN

BSc (Hons) in Construction Economics & Management 32100

Unless otherwise specified, subjects are compulsory and carry 3 credits

YEAR 1 [September 2003]

Semester One
BRE391  Construction Technology II
BRE208  Land Development Studies
BRE310  Measurement & Estimating

Semester Two
BRE311  Building Structures & Services
BRE319  Property Investment & Finance
BRE333  Land and Construction Economics

YEAR 2 [September 2004]

Semester One
BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
BRE339  Construction and Project Management
BRE329  Construction Contract Law
IC301  Industrial Safety I (1 credit)

Semester Two
BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
BRE334  Construction Procurement Management
ELC304  English in the Workplace

YEAR 3 [September 2005]

Semester One
BRE423  Professional Studies III (6 credits in 2 semesters)
BRE419  Value Management
BRE430  Bidding, Forecasting and Cost Control

Semester Two
BRE322  Research Methods
BRE423  Professional Studies III (6 credits in 2 semesters)
BRE420  Building Service Practice & Contract Procedure

YEAR 4 [September 2006]

Semester One
BRE406  Dissertation (6 credits in 2 semesters)
BRE415  Dispute Resolution
Elective  1 elective subject

Semester Two
BRE406  Dissertation (6 credits in 2 semesters)
BRE408  Civil Engineering Practical Contract Procedure

Elective Subjects
BRE409 Strategic Management of Complex Projects
BRE416 Computerization of Construction Production & Management
BRE433 Management for Project Development Process in China Mainland
BRE434 Maintenance Technology & the Built Environment
BRE427 Applied Property Investment
BRE401 Construction Technology III
BRE337 Property Law

Remarks:
Students are also required to complete CLC201, CLC211 and one General Education subject. Details to be informed.

Total credits = 79
### PROGRESSION PATTERN

**BSc (Hons) in Real Estate 32099**

*Unless otherwise specified, subjects are compulsory and carry 3 credits*

#### YEAR 1 [September 2003]

**Semester One**
- BRE208  Land Development Studies
- BRE315  Property Valuation
- BRE332  Land and Property Economics

**Semester Two**
- BRE213  Financial Mathematics & Accounts
- BRE326  Maintenance Technology and Management
- BRE319  Property Investment & Finance

#### YEAR 2 [September 2004]

**Semester One**
- BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
- BRE341  Property Management I
- BRE337  Property Law
- IC301  Industrial Safety I (1 credit)

**Semester Two**
- BRE342  Professional Studies II (6 credits) (span to year 3, S.1)
- BRE316  Urban & Regional Planning
- ELC304  English in the Workplace

#### YEAR 3 [September 2005]

**Semester One**
- BRE336  Development Control Law
- BRE423  Professional Studies III (6 credits in 2 semesters)
- BRE436  Applied Property Valuation

**Semester Two**
- BRE322  Research Methods
- BRE423  Professional Studies III (6 credits in 2 semesters)
- BRE418  Real Estate Development

#### YEAR 4 [September 2006]

**Semester One**
- BRE406  Dissertation (6 credits in 2 semesters)
- BRE427  Applied Property Investment
- BRE429  Real Estate Marketing and Agency

**Semester Two**
- BRE406  Dissertation (6 credits in 2 semesters)
- BRE437  Facility Management
- ELECTIVE  One Elective Subject

**Elective Subjects**
- BRE409 Strategic Management of Complex Projects
- BRE419 Value Management
- BRE431 Housing Studies
- BRE432 Property Management II
- BRE311 Building Structures & Services

### Remarks:
Students are also required to complete CLC201, CLC211 and one General Education subject. Details to be informed.

Total credits = 82
10. SUBJECT PORTFOLIO
Subject Code: BRE208  
Level: 2  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120  
Assessment Method: Coursework 30% Examination 70%  
Credit Value: 3  
Pre-requisites: Nil  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept: C.W. Yeung (BRE)  

**LAND DEVELOPMENT STUDIES**

**Subject Aim:**

This subject is intended to:

1. Equip students with the ability to comprehend social and economic principles governing land use patterns and building forms in cities.
2. Make students aware of land development theories, different hierarchies of development controls, operation of the land development industry.
3. Familiarise students with problems associated with government’s land use policy.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Identify the factors affecting settlement patterns, forms, growth and decline.
2. Be aware current land use issues and government planning policy.
3. Recognise the basic process and procedure of procuring built facilities.
4. Comprehend land use problems and evaluate government’s land use policy.
5. Be aware the possible complications that may arise by the introduction of government control over the development process.

**Brief Syllabus Content:**

*Urban Studies (Theory)*  
The evolution of human settlements with reference to their forms and their social, political and economic functions.  
An introduction to economics of urbanization; urban structure, urban growth, urban renewal and rural development.

*Planning and Land Use Control (Macro)*  
The emergence of government control over land use development and design.  
The factors influencing the location of residential, commercial and industrial development.  
The development of transport and its impact on land development.  
Current planning problems and issues in large cities with special reference to Hong Kong, and indications on other South East Asian centres.

*Development Process (Micro)*  
An overview of the process to be followed from inception, design, construction and disposal of built facilities.  
An introduction to statutory and administrative procedures related to the development process.  
The civil design process with regards to spatial, facility and aesthetic requirements.  
Process of design, user’s requirements, land design and client’s brief.

*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):*

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 an in-depth land use study in one of the pre-defined planning areas in Hong Kong. Computer-aided packages, mainly through Internet technology, will be provided to students for self-learning and assessment purpose.

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

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

- **Examination:** 70%; students are required to sit a three hour examination.
- **Land Use Studies Report (Group):** 15%; a 40 page report (charts, figures, photos and appendices inclusive) studying the land use problems and possible solutions in one of the pre-defined planning areas in Hong Kong. Students are also required to give presentations on their findings.
- **Seminar Questions (Individual):** 15%; essay and multiple choice type questions.

The individual test will assess learning outcome 1, 2 and 3. The group project will assess learning outcome 4 and 5. The examination will assess all the 4 learning outcomes.

## Reading List:

### Recommended:

- Buildings Department (1990), *Building Control in Hong Kong*, Hong Kong Government Printer.
- *Proceedings of A Conference on the Comprehensive Review of the Town Planning Ordinance* (1991), Hong Kong Institute of Planners and University of Hong Kong.

### Supplementary:

- Hong Kong Housing Authority Annual Reports.
- Hong Kong Housing Society Annual Reports.
- Land Development Corporation Annual Reports.
- Property Reviews, Rating and Valuation Department.
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.
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:


FINANCIAL MATHEMATICS AND ACCOUNTS

Subject Aim:

This subject is intended to:

1. Introduce to the students the basic principles of Mathematics of Finance and Financial Accounting relevant to the real estate industry.

2. Focus on the various applications of the principles related to the real estate industry.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Apply basic mathematics of finance in solving simple real estate investment development problem.

2. Interpret and evaluate the financial strength of real estate companies by ratio analysis.

Brief Syllabus Content:

Compound Interest, Present Value, Future Value, Ordinary Annuity, Annuity Due, Equation of equivalence, Amortisation.

Discount Cash Flow methodology: NPV and IRR. Limitations of IRR. NPV profile and cross-over rate.

Introduction to financial accounting including basic accounting process, foundations of recording accounting transactions, and financial statements analysis and interpretation, ratio analysis.
**Learning and Teaching Approach (tasks and activities designed to achieve learning outcomes):**

The principles of Mathematics of Finance and Financial Accounting will be introduced in lectures. Application of the principles to solve problems in relation to the real estate industry will be learnt through case studies, problem-solving exercises, presentation etc. Discussion will be facilitated in small tutorial groups.

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

Examination (1) and courseworks (2) will constitute 70% and 30% of the overall mark for the subject respectively. The coursework mark will be based on the assignments and/or presentations.

**Reading List:**

**Recommended:**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>CSE290</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Level</strong></td>
<td></td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect: 21</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>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>C.M. Lee (CSE)</td>
</tr>
</tbody>
</table>

**INTRODUCTION TO GEOTECHNOLOGY**

**Subject Aim:**

This subject is intended to:

1. Provide students with instruction on the fundamentals of geotechnology.
2. The course provides 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
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 complex and high-rise building, a task which is required as the role of construction engineer/manager. At the end of this subject, the student is expected to be able to design building structures and temporary/works during building construction.

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 and comprehend 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. Comprehend the structural principles and their applications to load and stability analysis of erecting temporary structures, in particular cranes of various forms, usually required in the construction process (related to either demolition of old or construction of new building structures) with due considerations of different construction and environmental loads.

Brief Syllabus Content:

Structural engineering for building design
Qualitative and quantitative application of structural principles to reinforced concrete design: elastic load factor and limit state, singly and doubly reinforced beams, simply supported slabs, compression members under axial load, shear reinforcement average and local bond stresses, footing and pile caps; openings through walls, beams and slabs for services distribution; structural problems associated with demolition, adaptation and retro-fitting of buildings.

Structural principles applied to the use of structural steel
Analysis of composite sections, beams and columns, assessment of loading, standard, welded and bolted connections, procedures for testing of welds and welders.

Temporary works engineering
Codes, Standards and Regulations related to temporary works. Loads created by construction equipment during the construction process. The structural principles, load analysis, economic consideration and quantitative methods applied to erection and provision of temporary works/structures: bracing and shoring, suspended cradles working platforms, mobile cranes, bases and supports for static and climbing cranes, hoists, concrete placing booms and pumping pipelines, support for temporary floor and wall openings.

Safety considerations during construction and essential maintenance of the structural elements, design loads and dangers of overloading.
**Learning and Teaching Approach** *(tasks and activities designed to achieve learning outcomes):*

Teaching is based on lectures and to be supported by experimental and practical work conducted in laboratory and industrial training centre. Tutorials are to include problem-solving exercises and site visits are to be arranged to witness theory put to work in practice.

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

Examination and coursework will constitute the 70% and 30% of the overall work of the subject respectively. Written examination will provide typical. The coursework mark will be based on the assignments, seminar presentations and discussions.

**Reading List:**

**Recommended:**

- Statutory Regulations/Standards for reference only
- 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.
Subject Code: BRE310
Level: 3
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: D.S. Drew (BRE)

Subject Aim:
This subject is intended to:
1. Apply measurement and cost estimation for projects of various nature and selection of tendering documentation to fulfil project needs.

Learning Outcomes:
Students will demonstrate their ability to:

1. Application of the measurement, estimating and documentation practice in the construction industry.
2. Analyse various market and financial factors that influence the estimating methods and tendering system.
3. Analyse and synthesis composition of unit rates and an appreciation of the cost.

Brief Syllabus Content:

Measurement:
Measurement techniques: measurement of buildings, comparative studies of measurement procedures and examination of forward trends.
Communication between designer, producer and estimator; types of documentation and their uses; preparation and uses of bills of quantities and specifications; preambles and preliminaries.

Estimating:
Factors influencing the financial aspects of building production. Factors that influence the pricing of new works.
Tender documentation: tendering with or without bills of quantities. Contractor selection: competition or negotiation. The role of the estimator. Cost studies.
Evaluation of resources: labour, plant and materials. Enquiries for materials and sub-contract prices; calculation of unit rates; calculation of preliminaries and temporary works.
Introduction to preliminaries; introduction to estimating methods using general purpose software, estimating packages, and on-line databases.
Estimator’s cost report to management.
The initial selection of sub-contractors and their price comparison and resulting attendance.
Head office and company overhead costs. Profit considerations, including the effects of rate loading and strategic pricing.
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. Discussions and real examples will be given during tutorial periods. Students’ presentations, coursework feedback and guided problem-solving shall be conducted during seminars. External guest speakers from industry will be invited to share their experiences during some of the seminar periods to discuss up-date software and techniques in use.

Real examples are introduced into the module to simulate students’ thinking in problem identification and problem solving in the pre-contract stage. These will include the changing market environment both locally in H.K. and P.R.C. and other countries.

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

Examination and coursework will constitute 50% and 50% of the overall work of the subject respectively. The coursework mark will be based on assignments, seminar presentations and discussions. (at least 1 no. of coursework to be issued)

Reading List:

Recommended:
Ministry of Construction (1996) Construction Price Index - Ministry of Construction, China
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)
Tong L.Y., Quantity Surveyor’s Handbook, China Construction Industry Publisher

Supplementary:
### Subject Code: BRE311  
#### Level: 3  
#### Contact Hours: Lect:21 TU/Sem:14 Lab:8  
#### Student Effort: Hours 120  
#### Assessment Method: Coursework 50% Examination 50%  
#### Credit Value: 3  
#### Pre-requisites: BRE201 or BRE291 and BRE203  
#### Co-requisites: BRE204, BRE303  
#### Exclusions: Nil  
#### Subject Leader/Lecturer/Dept.: W.F. Tsang (BRE)

### BUILDING STRUCTURE AND SERVICES

#### Subject Aim:

*This subject is intended to:*

1. Develop an appreciation of the structural behaviour of buildings and their servicing needs. Through problem solving using structural detailing and an examination of building components, this subject seeks to further develop an understanding of construction.

#### Learning Outcomes:

*Students will demonstrate their ability to:-*

1. Apply the concepts of structural mechanics to solve structural problems involving beams, columns and statically determinate frames commonly found in buildings.
2. Quantify and analyse the internal and external forces acting within and upon a structural component under various anticipated loading conditions, static or dynamic.
3. Design simple structural elements to withstand these forces in their respective loading conditions.
4. Understand and recognize the failure modes and characteristics of simple structural elements.
5. Understand the erection and assembly procedures appropriate to high rise structures.
6. Prepare appropriate production information such as specifications and instructions.
7. Understand the importance of detailing of construction to achieve performance requirements.
8. Understand the method of operation, function and capabilities of service systems.
9. Understand the relationship between the design of building services and the overall building design.
10. Select the appropriate design, scale and size of each system.
11. Understand the sequence of building service installation and its interaction with building work.
12. Understand the need for maintenance - performance standards.

#### Brief Syllabus Content:

- Structural engineering concepts and structural behaviours.
- Identification of forces and their effects on structures.
- Reaction of structural materials to imposed loads (with induced stresses and deformation)
- Beams: Simple flexural theory. Computation of bending stresses, shearing force and bending moment distribution, deformation and deflection of beams, sizing of simple reinforced concrete or steel beams to current British Standards.
- Detailing of cladding and curtain walling systems; movement control.
- Specifications for construction.
- Temporary works engineering.
- Safety considerations.
- Building services design for installation work of high rise buildings.
- Distribution services: cold and hot water supply, gas, electricity distribution and supply.
- Discharge and disposal: sanitation, plumbing drainage, above and below ground drainage, refuse systems.
- Environmental services: heating, air-conditioning, ventilation, humidification, refrigeration and lighting systems.
- Vertical and horizontal internal transportation: lifts, escalators and conveyors.
- Fire and security: equipment, prevention and detection and suppression systems.
- Computers and communication
- Installation sequence and integration with building fabric.
- The cost implications of service installations - capital and running costs, maintenance.

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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>
</tr>
</thead>
<tbody>
<tr>
<td>Teaching is based on lectures and to be supported by experimental and practical work conducted in laboratory and industrial training centre. Tutorials are to include problem-solving exercises and site visits are to be arranged to witness theory put to work in practice. 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.</td>
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<table>
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<tr>
<th><strong>Experimental work:</strong></th>
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<tbody>
<tr>
<td>4 experiments each of 2 hours duration or similar.</td>
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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 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.</td>
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</table>

<table>
<thead>
<tr>
<th><strong>Reading List:</strong></th>
</tr>
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<tbody>
<tr>
<td><strong>Recommended:</strong></td>
</tr>
<tr>
<td><strong>Structures:</strong></td>
</tr>
<tr>
<td><em>Code of Practice for Falsework - BS 5975</em>, British Standard Institution</td>
</tr>
</tbody>
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<tr>
<th><strong>Services:</strong></th>
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<tbody>
<tr>
<td>ASHRAE Handbooks: Atlanta. USA.</td>
</tr>
<tr>
<td><em>Handbook of Fundamentals</em></td>
</tr>
<tr>
<td><em>Handbook of Applications</em></td>
</tr>
<tr>
<td><em>Handbook of Equipment</em></td>
</tr>
<tr>
<td><em>Handbook of Systems</em></td>
</tr>
<tr>
<td>Hall, F., (1987) <em>Building Services &amp; Equipment Vols. 1 to 3</em>, Longman</td>
</tr>
</tbody>
</table>

<p>| <strong>Supplementary:</strong> |</p>
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE315</th>
<th>PROPERTY VALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Level</td>
<td>3</td>
<td>Subject Aim:</td>
</tr>
<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
<td>This subject is intended to:</td>
</tr>
<tr>
<td>Student Effort Hours</td>
<td>120</td>
<td>1. Understand the nature of the market and property values.</td>
</tr>
<tr>
<td>Assessment Method</td>
<td>Coursework 50% Examination 50%</td>
<td>2. Examine the theories of current valuation methods.</td>
</tr>
<tr>
<td>Pre-requisites</td>
<td>Nil</td>
<td>3. Solve valuation problems.</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
<td></td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>K.C. Wong (BRE)</td>
<td></td>
</tr>
<tr>
<td>Learning Outcomes:</td>
<td></td>
<td>1. Identify the various frameworks, including physical, economic and legal, that affect property value.</td>
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<td>2. Evaluate the choices of the various valuation approaches and methods in the valuation of different types of property for different types of value estimate.</td>
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<td>3. Apply current valuation methods to solve valuation problems.</td>
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<td></td>
<td>4. Identify the use of valuation in the management and decision making process in real estate development, investment and management.</td>
</tr>
<tr>
<td>Brief Syllabus Content:</td>
<td></td>
<td>Value and valuation; concepts; economic principles; valuation tables; role of valuer.</td>
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<tr>
<td></td>
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<td>Real property market data sources: information; market trends and cycles.</td>
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<td>Valuation process; valuation report writing.</td>
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<tr>
<td></td>
<td></td>
<td>Methods of valuation; comparative, investment, residual, cash flow; cost and profits methods.</td>
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<tr>
<td></td>
<td></td>
<td>Valuation of freehold and leasehold interests; capital and rental values; theories of yield; deferred and varying incomes; extension and renewal of leases.</td>
</tr>
</tbody>
</table>

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

Lecturers 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 will 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


Appraisal Institute, (1996) *The appraisal of Real Estate*

**Supplementary:**


Davidson, A.W., (1989) *Parry’s Valuation and Investment Tables*, Estate Gazette
Subject Code BRE316
Level 3
Contact Hours LT/SM : 42
Student Effort Hours 120
Assessment Method Coursework 50%
Examination 50%
Credit Value 3
Pre-requisites BRE208
Co-requisites Nil
Exclusions Nil
Subject Leader/ Lecturer/Dept. C.W. Yeung (BRE)

**URBAN AND REGIONAL PLANNING**

**Subject Aim:**

*This subject is intended to:

1. Equip students with the ability to comprehend current urban and regional planning problems and policies adopted in coping with them.
2. Discuss empirical case studies on urban planning problems in Hong Kong and regional problems in China in order to promote students’ awareness of the importance of urban and regional planning policies in the real estate development process and their impact on the real estate market.*

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Comprehend the multi-disciplinary nature of urban and regional planning.
2. Identify the underlying economic, social, political and spatial factors determining urban and regional planning policies.
3. Recognise the town planning system in Hong Kong.
4. Apply the theories of urban and regional planning in analyzing current planning issues in Hong Kong and China.

**Brief Syllabus Content:**

A review of major theories related to urban and regional planning and a discussion on their relevance to the analysis of urban planning issues in Hong Kong.

A review of major urban planning problems in Hong Kong.

The 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.

*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):*

Relevant theories related to urban and regional planning will be introduced in lectures, supplemented with applications and discussions in seminars sessions. Case studies on urban and regional planning issues in Hong Kong, China and other countries such as urban redevelopment projects, regional imbalance problems and etc. will be discussed both in lectures and seminars in the context of the various theoretical perspectives in the study of urban and regional planning.

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

Examination and coursework will each constitute 50% of the overall assessment of the subject. The coursework will comprise an individual work on the presentation of selected articles on the subject area and a group work of about 5 students on a research project based on case studies of current urban and regional planning issues in Hong Kong or China. The coursework assessment will be based on the quality of the oral presentation during seminars and the written papers/research reports submitted. The individual work will assess learning outcome 1, 2 and 3. The Group work will assess learning outcome 4. The examination will assess all the 4 learning outcomes.

**Reading List:**

**Recommended:**

Hong Kong Government (1996), *Consultation Paper on Town Planning Bill.*


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


**Supplementary:**

Town Planning Ordinance
Crown Land Resumption Ordinance
The Land Development Corporation Ordinance
The Land Development Corporation, Annual Reports
PROPERTY INVESTMENT AND FINANCE

Subject Code: BRE319
Level: 3
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120
Assessment Method: Coursework 50% Examination 50%
Credit Value: 3
Pre-requisites: BUSS298
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: C.H. Lau (BRE)

Subject Aim:
This subject is intended to:
1. Foster students’ awareness and understanding of property finance and investment in today’s context.
2. Examine the theories of portfolio management.

Learning Outcomes:
Students will demonstrate their ability to:-
1. Understand financial theories and their applications to the landed property within an economy.
2. Evaluate alternative investments including real estate and securities.
3. Consider the implications of financial planning on property investment decisions in the Hong Kong context.

Brief Syllabus Content:

Property Finance
An overview of financial institutions, markets and instruments.
Sources and cost of finance for real estate developments and investments.
Mortgage loan analysis and mortgage securitization.
Property development finance: construction lending and finance for income properties.

Property Investment
Investment concepts and principles. Investment vehicles. Comparison between property investment and other investment vehicles.
Market efficiencies. Portfolio analysis, diversification and capital market theory. Risk and return in property and stock investments.
Financial implications of mergers and take-overs of companies with real property assets, not necessarily limited to property companies.
The effect of government policy and legislation on investment decision making on investments generally and property investments in particular.

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>
</tr>
</thead>
<tbody>
<tr>
<td>The principles of property finance and property investment as an important foundation from which to build a fuller understanding of the principle function of the real estate and construction sectors will be covered in lectures. The seminar periods will allow discussion and provide opportunities for students to deliver their discussion results and knowledge through presentations to their peers. Wherever possible, guest speakers will be invited to discuss and illustrate the various issues with real problems.</td>
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<tr>
<th><strong>Assessment strategy</strong> (assessment of student performance resulting from learning tasks):</th>
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</thead>
<tbody>
<tr>
<td>Assessment will be based on 50% coursework and 50% examination. Students’ basic understanding of the theories and their applications will be assessed.</td>
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<table>
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<tr>
<th><strong>Reading List:</strong></th>
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<tbody>
<tr>
<td><strong>Recommended:</strong></td>
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<tr>
<td><strong>Supplementary:</strong></td>
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</tbody>
</table>
RESEARCH METHODS

Subject Code: BRE322
Level: 3
Contact Hours: Lect:21 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.: C.M. Hui (BRE)

Subject Aim:

This subject is intended to:

1. Strengthen students’ capacity for independent, analytical study in the area of construction and real estate.
2. Introduce the role of management science, research techniques and methods and also sets out to describe the fundamentals and principles of descriptive and inferential statistics, sampling and surveying methods.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Select and pursue a non-trivial, researchable topic in the field of construction and real estate.
2. Formulate a set of questions in a way that renders them amenable to rigorous investigation.
3. Discriminate in the available written material, and identify that which is useful to the topic under investigation.
4. Synthesize the work of others and the information available.
5. Assess the relationship between the topic/subject under investigation and the general content of construction and real estate.
6. Understand the scientific management aspects of statistics, data sampling and analysis, information and decision making, etc.
7. Understand when and how to apply different principles and techniques in research.
8. Identify and make use of a research method appropriate to the subject.
9. Write out a research proposal for dissertation.

Brief Syllabus Content:

A. Producing a proposal: the concept of research, classifications of research, quantitative and qualitative approaches, selection of a topic.

B. Doing the research: theory and literature search & review, assembling the theoretical framework, choosing the methodology, proper referencing, hypothesis, data collection, data analysis, writing up dissertation, etc.

C. Qualitative approaches: such as participative and process observations, process measurement, focus group, delphi approach, brain storming, experiments interviews, questionnaire surveys, use of computer packages, etc.

D. Quantitative techniques: such as descriptive statistics, probability, random variables and distributions, sampling and sampling distributions, estimating, inferences and decision making, hypotheses and hypothesis testing, correlation, use of computer to solve statistical problems, etc.

E. Writing out a dissertation proposal: working title, objective, hypothesis (or key questions), outline methodology, proposed contents, initial references, work plan.

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 present concepts and principles of the various subject areas. Tutorial sessions will be used for discussion, problems solving, hands-on experience and presentation. Students will be expected to select and present ongoing written work at those tutorials with tutor(s). They will receive feedback from the tutor and from other students.

**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. Second, the assessment itself should contribute in some way towards reflection and learning.

**Reading 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*


**Recommended:**


MS Excel Reference Manual

SPSS/PC Reference Manual
Subject Code BRE324
Level 3
Contact Hours Lect:21 Sem/Tut:21
Student Effort Hours 120

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Coursework 30% Examination 70%</th>
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<tr>
<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
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</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
</tbody>
</table>

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

**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 construction supervision) of physical infrastructure and significant components of the built environment. Economic analysis as applied to engineering is concerned with pursuing the wise use of resources, and providing the analytical support for decisions about achieving value for money and choosing between competing proposals.

*This subject is intended to:*
1. Equip students with the theory and analytical skills necessary to make well informed, resource allocation decision.

**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Aware the economic framework within which resides the property and construction sector.
2. Use the analytical framework of economics to describe and analyse the development and production of the built environment.
3. Use a range of quantitative analysis techniques for project appraisal.

**Brief Syllabus Content:**


*Principles of Project Appraisal:* The 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 site 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 theory and the principles of the analysis techniques. Seminars are used to give the student the opportunity to practice the use of the mathematical techniques and applications of the principles of the economic appraisal of projects.

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 assignments, seminar presentations and discussions.

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. Understand the causes of common defects and material deterioration.
2. Diagnose building and propose remedial actions.
3. Supervise the maintenance work up to the required standard and quality.
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
- Building survey and report writing

Maintenance Management & Planning:
- Types of maintenance, classifications and selection criteria
- Maintenance planning and scheduling: budgeting, resources allocation and timing of maintenance
- Specifications for maintenance works and quality control procedures
- Alternative methods on executing of maintenance works: direct labour and contract out
- Contract procurement 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.

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 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:**

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE329</th>
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<tbody>
<tr>
<td>Level</td>
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<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
</tr>
<tr>
<td>Student Effort Hours</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 30% Examination 70%</td>
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<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
<td>BRE206</td>
</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
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<tr>
<td>Exclusions</td>
<td>Nil</td>
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<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>H.W. Chan (BRE)</td>
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</tbody>
</table>

**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 practice application of laws and procedures relating to construction contracts and their administration.

**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Comprehend the general principles of development control law and how they affect contract administration;
2. Analyse the legal issues in the modern development of law in contract and tort;
3. Differiniate the legal relationship among all the parties involved in different standard forms of construction contract;
4. Apply the legal principles, practices and procedures relating to the administration construction contracts.
5. Evaluate the legal issues in construction contract claims.

**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. Tutorial projects will also be set requiring the student to apply the relevant law and deduce solution for the cases and also to analyze, critically appraise and resolve administrative, organizational, technical and managerial problems.

Key topics will be set for groups of 4-5 students to carry out some research and prepare for 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 examination accounting for 70% (one end of semester written paper) and through the medium of coursework accounting for 30% (1 coursework assignment and 1 short written test).

**Reading List:**

**Recommended:**


**Supplementary:**

LAND AND PROPERTY ECONOMICS

Subject Aim:

This subject is intended to:

1. Extend the student’s understanding of the real estate market and land resources allocation problems by applying appropriate economic theories.

2. Focus on the urbanization process, theories of urban spatial structure, the location decisions and related policy decision issues.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Use relevant principles of economics to develop an understanding of the real estate market and urban economy.

2. Develop skills necessary to analyze data and policy implications to support decision-making process in real estate development.

3. Appreciate how economic analysis can be applied to land related economic problems and suggests ways for an optimal allocation of land resources.

Brief Syllabus Content:

Principles of real estate economics


Public Policy and real estate investment

Land policies and land administration. Costs and benefits of public sector projects. Economics of conservation in natural resources, landscapes. Real estate market analysis. Housing need, housing policy and housing supply. Housing subsidies and housing aid. Housing finance and housing tenure.
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

Economic theories related to real estate market will be introduced in lectures. Tutorial sessions will be used to underpin and develop the learning established in the lecture(s) on practical issues in land and housing markets. Students are also encouraged to discuss real life situations and are required to deliver their project work findings through presentation forums.

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

Students will be assessed through both coursework and examination.

Coursework will consist of project-oriented work and student led presentations.

Reading List:

**Recommended:**


**Supplementary:**


Subject Code: BRE333
Level: 3
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.: C.M. Hui (BRE)

Subject Aim:
This subject is intended to:
1. Enable students to understand economic theories and analytical techniques relating to the real property and construction markets and urban land issues.

Learning Outcomes:
Students will demonstrate their ability to:-
1. Appreciate the economic theories and analytical techniques relating to the real property and construction markets.
2. Understand economic forces with particular reference to the property development and construction process.
3. Apply the models and tools available for economic evaluation and analysis of current issues.
4. Source and retrieve relevant information.

Brief Syllabus Content:

Economic Theories & Concepts: Theoretical Foundations

Public Sector Intervention and Urban Land Issues
Economics of property rights and public sector intervention. Tools available for public intervention in land market. Land policies and land administration. Economic analysis of urban issues: housing problems and policies; transport problems; economic issues of urban renewal of redevelopment; environmental amenities and urban economics.

Construction Economics
Role of construction in the economy; Demand and Supply for construction; types of client, the client’s brief; meeting the client’s needs, behaviour and operation of the firm; productivity and financial control. Price determination of the construction project. Design economics; Cost planning. Introduction to cost modelling; cost indices; cost data. Life cycle costing techniques.

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>Learning and Teaching Approach  (tasks and activities designed to achieve learning outcomes):</th>
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<tbody>
<tr>
<td>The main theory and concepts will be delivered in lectures, the application and discussion being covered in seminars. Wherever possible, one to two guest speakers will be invited to discuss and illustrate the various issues with real problems and solutions. The intention is to create an environment that encourages active learning, consolidate understanding of and hence applications of the theories. Students will be encouraged to reflect on their learning activities.</td>
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<thead>
<tr>
<th>Assessment strategy  (assessment of student performance resulting from learning tasks):</th>
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<tbody>
<tr>
<td>Assessment will be based on coursework only, and will include term essays, seminar presentation, and also short tests. Term essays are used to assess learning outcomes (1) to (4); short tests for outcomes (1) and (2).</td>
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<th>Reading List:</th>
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<tr>
<th>Supplementary:</th>
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<tbody>
<tr>
<td><em>Hong Kong Statistics</em> (current issues), Hong Kong SAR Government</td>
</tr>
</tbody>
</table>
CONSTRUCTION PROCUREMENT MANAGEMENT

Contact Hours BRE334
Level 3
Contact Hours Lect:21 Sem/Tut:21
Student Effort Hours 120
Assessment Pattern Examination 30%
Coursework 70%
Credit Value 3
Pre-requisites Nil
Co-requisites Nil
Exclusions Nil
Subject Leader/ Lecturer/Dept. P.C. Chan (BRE)

Subject Aim:
This subject is intended to:
Provide students with an advanced knowledge of the various procurement methods for project delivery.

Learning Outcomes:
Students will demonstrate their ability to:-

1. Describe the different forms of procurement and their impacts on the success of a project.
2. Identify the principles underlying the choice of appropriate procurement methodologies and contractual arrangement for construction work.
3. Apply, compare, appraise and advise upon alternative procurement and contractual arrangements for all types of construction work.

Brief Syllabus Content:
The nature of building process, models of the process.
The building project environment, objectives, cost and time constraints and strategic planning.
Categorisation of procurement systems.
Alternative procurement and contractual arrangements such as project management, construction management, management contracting, design and build, turnkey contract, novation contract, build, operate and transfer.
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 *(tasks and activities designed to achieve learning outcomes):*

Lectures and tutorials will be run throughout the semester period. A lecture schedule outlining the topics to be discussed each week is distributed to students in the first lecture of the semester. During the lecture period, the lecturer introduces and discusses the topics, with frequent reference to, and examination of, published research papers. In tutorial periods, students are required to undertake exercises related to the lecture topic. The tutorial work is undertaken in small groups, and is generally reviewed and discussed in the tutorial period.

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

Examination and coursework will contribute 70% and 30% of the overall work of the subject respectively. The coursework mark will be based on assignment, seminar presentations and discussion. (At least 1 no. of coursework will be issued).

Reading List:

**Recommended:**


Subject Code: BRE335  
Level: 3  
Contact Hours: Lect:21 Sem/Tut:21  
Student Effort Hours: 120  
Assessment Method: Coursework 30%  
Examination 70%  
Credit Value: 3  
Pre-requisites: BRE206  
Co-requisites: Nil  
Exclusions: BRE323  
Subject Leader/Lecturer/Dept.: L.Y. Tang (BRE) M.F. Ho (BRE)  

**PROCUREMENT AND CONTRACTS**

**Subject Aim:**

**This subject is intended to:**

1. Review and evaluate the characteristics of procurement systems and methods of their administration.
2. Appraise the dominant procurement methods.

**Learning Outcomes:**

_Students will demonstrate their ability to:-_

1. Identify the different forms of procurement and their impact on the success of a project.
2. Explain how the choice of appropriate procurement systems is made.
3. Apply, compare, appraise and advise upon alternative procurement and contractual arrangements for all types of construction work.
4. Apply the laws and contract administration procedures relating to different procurement systems.

**Brief Syllabus Content:**

The nature of the building process; models of the process.

The building project; environment; objectives; cost and time constraints and strategic planning.

Categorisation of procurement systems.

Alternative procurement and contractual arrangements such as project management, construction management, management contracting, design and build, turnkey contract, novation contract, build, operate and transfer and the Standard Form of contracts available.

Procedures for instruction, variations, payments and certification for different procurement system.

Choice of appropriate procurement method, allocation of risks and liabilities of the major parties to the arrangement.

*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. A lecture schedule outlining the topics to be discussed each week is distributed to students in the first lecture of the semester. During the lecture period, the lecturer introduces and discusses the topics, with frequent reference to, and examination of, published research papers. In tutorial periods, students are required to undertake exercises related to the lecture topic. The tutorial work is undertaken in small groups, and is generally reviewed and discussed in the tutorial period.

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

Examination and coursework ill contribute 70% and 30% of the overall work of the subject respectively. The coursework mark will be based on assignment, seminar presentations and discussion. (At least 1 no. of coursework will be issued).

**Reading List:**

**Recommended:**


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<thead>
<tr>
<th>Subject Code</th>
<th>BRE336</th>
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<tbody>
<tr>
<td>Level</td>
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<td>Nil</td>
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<tr>
<td>Exclusions</td>
<td>Nil</td>
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<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>K.K. Lo (BRE)</td>
</tr>
</tbody>
</table>

### DEVELOPMENT CONTROL LAW

#### 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 relating to property development.
2. Demonstrate their learnt knowledge on the integrated approach to legal control of new development and existing properties;
3. Comprehend the rationale behind the legislation in order to adopt a most appropriate planning on design and construction of property amongst other choices; and
4. Generate select the most appropriate option within the constraint of development law.

#### 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.
**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 30% and the written examination will account for 70%. 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. Questions will be asked during presentation to ensure the students have done and understand their own work.

1 seminar papers and 1 project work.

**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
PROPERTY LAW

Subject Aim:

This subject is intended to:

1. Develop knowledge and reasoning skills developed in BRE 206, The Legal Context of Construction and Real Estate;
2. Extend knowledge of property law;
3. Examine law relating to property transactions, land use control and compensation

Learning Outcomes:

Students will demonstrate their ability to:

1. Explain the key concepts and principles of Hong Kong land law and conveyancing.
2. Discriminate between property concepts.
3. Use knowledge and reasoning skills to solve legal problems relating to ownership and land use control.

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 seen examination comprising a combination of breadth and depth problems designed to assess knowledge, reasoning ability, and critical judgment.

The examination paper will be distributed to the students prior to the examination. The seen examination is designed to facilitate the extent to which learning outcomes are achieved; and to provide a valid and reliable means of grading performance.

**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
<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE338</th>
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<tbody>
<tr>
<td>Level</td>
<td>3</td>
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<tr>
<td>Contact Hours</td>
<td>Lect:21 Sem/Tut:21</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 30% Examination 70%</td>
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<tr>
<td>Pre-requisites</td>
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<tr>
<td>Co-requisites</td>
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</tr>
<tr>
<td>Exclusions</td>
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<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>H.W. Chan (BRE)</td>
</tr>
</tbody>
</table>

**CONSTRUCTION LAW**

**Subject Aim:**

*This subject is intended to:*

1. Introduce students to the legal aspect in construction contracts. Provide students a general understanding of the local construction laws and how these may affect the construction industry and property development activities.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Comprehend the general principles of law.
2. Explain the legal issues in different contractual arrangements.
3. Differentiate the liabilities of the building professionals.
4. Apply the regulations and code of practice that affect the process and standard of construction.

**Brief Syllabus Content:**

*Update on general principles of law in Hong Kong*

- Contractual and Common Law remedies.
- Characteristics of various standard forms of local and international building contracts and sub-contracts.
- Legal relationship of the parties to the contract under different contractual arrangements. Legal implications of instructions, variations, payments and certification.

*Building control*

Development and building control through administrative measures and technical requirements; control and enforcement of illegal and dangerous structures; role of Authorized Person and Registered Contractor; Building (Administration) Regulation; Building (Construction) Regulations;

*Safety*

Construction Site (Safety) Regulations, Factories and Industrial Undertaking (Safety Management) Regulations, Aerial Ropeways (Safety) Ordinance, Supervision Plans; control of health and safety on site by government departments.

*Other related Laws*

Law relating to environment. Other major legislation affecting development. Practice Notes for building professionals and registered contractor.

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

**Lectures:**
A lecture schedule outlining the topics to be discussed each week is distributed to students in the first lecture of the semester. During the lecture period, the lecturer introduces and discusses the topics, with frequent reference to, and examination of, published research papers.

**Tutorials:**
In tutorial periods, case study/topic discussion projects will be assigned to small group of 4-5 students to encourage students to take initiation to research, to apply the knowledge learnt to tackle problem and to benefit from peer group learning.

**Case study/topic discussion projects:**
The projects will emphasis on the application of knowledge and understanding the integration of the subject material into a construction project.

**Research:**
Relevant research paper will be disseminated and discussed. “Criticism” of practitioners will be considered in the project presentation.

Supervision will be provided to individual and group. I.T. will be deployed to support teaching.

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**Assessment strategy** *(assessment of student performance resulting from learning tasks):*
70% examination (1 written paper) + 30% coursework (1 assignment and 1 short written test).

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**Reading List:**

**Recommended:**
Shum, C (1998), General principles of Hong Kong law, 3rd ed., Hong Kong: Longman.


**Supplementary:**


Buildings Department, *Practice Notes for Authorized Person and Registered Structural Engineers*, H.K. Government Printer (latest amendment)

Buildings Department, *Practice Notes for Registered Contractors*, H.K. Government Printer (latest amendment)


Yao Bing (1995) *Discussion on the Management of Construction Project and Building Industry*, PRC Building Industry Publisher, pp.130-131 (CHINESE TEXT)
CONSTRUCTION AND PROJECT MANAGEMENT

Subject Code: BRE339
Level: 3
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method:
Coursework 50%
Examination 50%

Credit Value: 3

Pre-requisites: BRE292 or equivalent
Co-requisites: Nil
Exclusions: Nil

Subject Leader/Lecturer/Dept.: P.W. Fox (BRE)

Subject Aim:
This subject is intended to:
1. Extend students' understanding of management principles and the legal environment to develop and to consolidate the knowledge of construction and project management in the construction and real estate industry.

Learning Outcomes:
Students will demonstrate their ability to:
1. Understand the principles and practice of project management in the construction industry;
2. Understand the nature of business organisations in the construction industry, their organisation and social responsibility;
3. Select appropriately and apply operational planning techniques for control of construction & development projects;
4. Use effectively a full range of communication skills;
5. Use management performance data and organise resources;
6. Make appropriate decisions in business organisations.

Brief Syllabus Content:

Project Management in Construction
Introduction to project procurement, design management, production management and the design and production relationship.
Project planning and programming techniques; resource allocation and levelling; selection of appropriate construction methods.
Quality assurance system, production control and records. Productivity & performance in construction.

Business Organisation
Theories and applications of business organisation in the construction industry.
The nature, purpose and formation of business organisations in the construction industry, office policies and procedures; office administration.
Information management and social responsibility.

Integration of Business and Project Management
Process of management; office and site organisations; human resources, marketing, finance, production & purchasing departments.
Resources for manpower, material, equipment and finance. Project information management.

Human Resources
Recruitment, selection and engagement of personnel in the construction and real estate organisations; performance appraisal and incentives.
Managing types of labour: direct employed, sub-contract and management staff.
Safety, health and welfare, industrial relations.

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 introduce principles and theories whilst the small group work will be used for the application of the principles and theories to management problems through role-play, case studies 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 activities, seminar 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:**


BRE340 was superseded on 26/1/2004 and has been substituted by BRE322

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<td>Subject Leader/ Lecturer/Dept.</td>
<td>W.M. Chan (BRE)</td>
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</table>

**QUANTITATIVE ANALYSIS**

**Subject Aim:**

This subject is intended to:

1. Introduce the role of management science, research techniques and methods for the construction and real estate students.
2. Describe the fundamentals and principles of descriptive and inferential statistics, sampling and surveying methods.

**Learning Outcomes:**

On completion of this subject, students are expected to gain:-

1. An ability to relate professionally the scientific management aspects of statistics, data sampling and analysis, information and decision making to the overall construction development process.
2. An understanding of when and how to apply these principles and techniques in the construction development process.
3. An ability to discuss, apply, present and communicate where appropriate the above with other members of the professional project team.

**Brief Syllabus Content:**

Descriptive Statistics  
Probability  
Random variables and distributions  
Sampling and sampling distributions  
Estimating  
Inferences and decision making  
Hypotheses and hypothesis testing  
Correlation and regression analysis  
Use of computer to solve statistical problems

**Learning and Teaching Approach:**

Lectures will be used to present concepts and principles of the various subject areas. Tutorial sessions will be used for discussion, problems solving, hand-on experience and presentation. Interactive multimedia self-accessed learning materials will be provided via the Learning on Demand System.

*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:
Examination and coursework will constitute 70% & 30% of the overall work of the subject respectively. The coursework mark will be based on assignments, seminar and discussion.

Reading List:
Essential:
Lucey T. (1992) Quantitative Techniques ELBS
Reichmann W.J. (1961) Use and Abuse of Statistics, Methuen

Recommended:
MS Excel Reference Manual
SPSS/PC Reference Manual
**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:


Subject Code: BRE342  
Level: 3  
Contact Hours: Sem:14 and PW:140  
Student Effort Hours: 240  
Assessment Method: Coursework 100%  
Credit Value: 6  
Pre-requisites: BRE215 or BRE293  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: K.F. Man (RE)  
C.Y. Yiu (BS)  
S.W. Fong (CEM)  

### 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.

### Learning Outcomes:

Students will demonstrate their ability to:-

1. Understand the major issues involved in the development and construction process.
2. Be aware of the value of teamwork as an approach to tackle a project and solve problems.
3. Apply knowledge and skills acquired in various subject areas and to solve problems in the professional context.
4. Understand the future development of the professional surveying industry in Hong Kong and the Asia Pacific region.

### 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 the students to make use of and integrate knowledge from previous and current subject modules. Each project will include elements of interdisciplinary, group and individual work. The projects require students to develop solutions creatively and to present recommendations systematically. Comparative study.

### 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 2 semesters of year 2.

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 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 50% for group work and 50% for individual work.

### Reading List:

Construction Journals, Databases, Statistics and Module Texts
CONSTRUCTION TECHNOLOGY II

Subject Aim:

This subject is intended to:

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.

Specific Aims are to:

1. identify and understand the range of advance technologies that are available and appropriate for the construction of contemporary buildings.
2. facilitate an understanding of the centrality of technological decision making in the context of the wider construction process.
3. 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. Evaluate a range of available advance technological solutions appropriate to contemporary buildings based upon economic, performance sustainability and lean criteria in line with the current construction processes.
2. Comprehend the design and construction of deep basement in relation to the foundation of high-rise and complex buildings.
3. Use engineering methods of construction for steel and concrete structures including high-rise structures, complex walls, floors and roofs.
4. Apply code of practice and method statement.
5. Apply information technology in construction processes.

Brief Syllabus Content:

Soil types, foundation/basement construction in relation to the use/design of building.

Super-structural Works:
Steel frame structure: types of frame, span, erection and connections, joint details, temporary support, composite floor construction and incorporation of building services.
Reinforced concrete structure: methods and processes, construction cycle and design and selection of formwork systems, scaffolding system.
Fire protection of concrete and steel frame structure: principles and methods, fire-proof materials, construction details, and fire test.
Complex wall and finishes (including curtain wall and structural glazing), floor and roof: performance requirements and testing, materials and components, and construction procedures. e.g cladding, raised floor, demountable partition, etc.
Environmental issues in construction, environmental protection, sustainable construction.

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):*

A series of formal lectures and tutorials will be delivered over the whole semester. Course notes will also be available for each lecture. These will be supplemented by inviting guest speakers, laboratory and group project works. Multi-media presentations will also be used as appropriate.

**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 helping students to develop analytical understandings and skills to achieve the learning outcomes.

**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
BRE392

## Level
3

## Contact Hours
- Lect: 21
- TU/Sem: 14
- Lab: 8

## Student Effort Hours
120

## Assessment Method
- Coursework 30%
- Examination 70%

## Credit Value
3

## Pre-requisites
Nil

## 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. The basic design intent and their integration with the building fabric and architectural features.

## Learning Outcomes:
Students will demonstrate their ability to:
1. Understand the basic design for the major building services engineering systems found in buildings.
2. Identify the relationship between the design of building services and the overall building design.
3. Provide comments on the design and operation of building services system at the design and construction stage.
4. Appreciate the cost and value relationship on the selection of appropriate building services system.

## Brief Syllabus Content:
Major building services design servicing both low-rise and high-rise buildings. Key elements impacting on indoor environmental quality and energy efficiency.

Distribution services: potable water supplies, gas, electricity distribution and utilisation, earthing and bonding requirements, lightning protection of structures.

Discharge and disposal: plumbing and drainage, flushing water supplies and refuse systems.

Environmental services: heating, ventilation, air-conditioning.

Vertical and horizontal internal transportation: lifts, escalators and conveyors – planning and construction, services requirements.

Fire and security systems: equipment, prevention and detection and suppression systems, integration with other Building Services system.

An introduction to the Measurement of Building Services Installation.

*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)*:

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: laboratory demonstration and testings.

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 70% and 30% 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, peer-groups, critiques, tests and examinations.

**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: BRE393
Level: 3
Contact Hours: Lect: 21 PW: 42
Student Effort Hours: 120
Assessment Method: Coursework 100%
Credit Value: 3
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.

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.

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.

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):

A structural design project based on real life situation is to be used for setting the project. The project will be divided into two parts. The first part deals with the design of the structural elements, while the second demands students to prepare design of falsework systems to facilitate the construction of the structural elements. 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.

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

The assessment of the subject will be by continuous assessment. 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 checked 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.

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.

Recommended:


Subject Aim:

This subject is intended to:

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

Learning Outcomes:

Students will demonstrate their ability to:-

1. Recognize the inter-relationship and interdependence of various areas in construction.
2. Comprehend the operations, technology & structure, management, economics and legal impacts of the construction industry of both local and other countries.
3. Prepare for the transition into professional practice with exposure to the various significant problems of building production, engineering and management, professional ethics portrayed from the perspectives of professionals active in the field. Speakers may present views of engineering, technology, with a management, scientific, economic, legal, social or political bias on consideration/constraints on the current construction projects. Such views will be focused on the developments in the South East Asia region, although experiences of related world-wide experience may be drawn upon. In this way students will be encouraged to adopt a broader, objective view of the multi-disciplinary nature of the building production and will be better able to exercise professional judgements in their subsequent careers in the field.

Brief Syllabus Content:

The project requires student to make use of and integrate knowledge learned in year 1 and currently to tackle the project. A Co-ordinated set of group project is designed to integrate subjects particularly those relating to building technology, building services, construction economics, construction management and law. The project requires students to search and analyse, to develop solution(s) creatively and to present and make recommendations systematically.

The seminar topics will vary from year to year as fit to the current construction of the time. The suggestive topics are e.g. building construction process in current building projects in Hong Kong, problems on site formation/foundation construction/deep basement construction with special reference to Hong Kong cases, ethical issues, installation of building services in long span construction e.g. the case study of the Extension of the Convention and Exhibition Centre.

International studies.
<table>
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<tr>
<th><strong>Learning and Teaching Approach</strong> (tasks and activities designed to achieve learning outcomes):</th>
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<td>The project is divided into two major components, the group project with the integration of technology, management, economics &amp; law and international study project.</td>
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For **project**, students are required to form in groups of five, with given project work brief containing details of the project, date for submission, content and method of assessment. Students are asked to prepare a report (or drawings as required) recommending the most appropriate construction technique and sequences to be adopted for completing the project. Also, they are asked to prepare documents necessary to propose a suitable management structure for administrating the project.

Two seminars of two hour duration will be held over the semester.

Seminars will be chaired by a member of the academic staff and the speaker will present views on the seminar topic. Not less than 1 hour will be set aside for subsequent discussion. Attendance will not be limited to students on this degree programme and will be open to all staff and students.

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 industries 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.

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<th><strong>Assessment strategy</strong> (assessment of student performance resulting from learning tasks):</th>
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<td>Evaluation of this subject will be by continuous assessment. The assessment will examine the student understanding of current issues and views by way of their incorporations in the integrated project and international study.</td>
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For the construction engineering project, students have to produce a report. They also need to prepare a group presentation on their findings and work done together with the submission. At regular intervals, students will be asked to report to their supervisors on the progress of work and will be commented and assessed by the respective supervisors. The report will be marked with individual contribution on a particular area.

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 stage 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.

<table>
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<td>No standard text are recommended, since students have to refer to a wide selection of literature in order to achieve the requirement of the studies.</td>
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</table>

Reference will be made to current articles in journals, local newspaper, would press, proceedings dealing with topics of current importance.

ICAC (1996) Ethics for Professional (Architecture)
**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. Prepare students for more 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 | ELC304
---|---
**ENGLISH IN THE WORKPLACE (EIW)**

**Level** | 3
**Contact Hours** | Tut/Sem: 42
**Student Effort Hours** | 120

**Assessment Method** | Coursework 100%
**Credit Value** | 3
**Pre-requisites** | English for Academic Purposes (EAP)
**Co-requisites** | Nil
**Exclusions** | Nil

**Subject Leader/Lecturer/Dept.** | (ELC)

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**Subject Aim:**

*This subject is intended to:*

1. Develop those English language skills required by the students to communicate effectively in their future professional careers.

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**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.

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**Learning and Teaching Materials:**

“English in the Workplace” published by the English Language Centre, the Hong Kong Polytechnic University and the Macmillan Publishers (China) Ltd.

Specially prepared material from the English Language Centre will be used throughout the course. In addition, lecturers will recommend additional reference materials as required.
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<th>IC301</th>
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</thead>
<tbody>
<tr>
<td>Level</td>
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<tr>
<td>Contact Hours</td>
<td>Lect/WS:24</td>
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<td>Assessment Method</td>
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<tr>
<td>Credit Value</td>
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<td>Pre-requisites</td>
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<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>IC</td>
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</tbody>
</table>

**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. 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.
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<thead>
<tr>
<th>Subject Code</th>
<th>IC302</th>
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<tr>
<td>Level</td>
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<td>Contact Hours</td>
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<td>Assessment Method</td>
<td>Coursework 100%</td>
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<tr>
<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
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<td>Co-requisites</td>
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<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>Albert Kwok (IC)</td>
</tr>
</tbody>
</table>

**INDUSTRIAL SAFETY II**

**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.

### 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.
CONSTRUCTION TECHNOLOGY III

Subject Code: BRE401
Level: 4
Contact Hours: Lect:21 Tut:14 Lab:8
Student Effort Hours: 120
Assessment Method: Coursework 30% Examination 70%
Credit Value: 3

Pre-requisites: BRE391
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: A.C. Cheung (BRE)

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 innovative and workable solutions.
2. Evaluate and apply quantitative and qualitative techniques appropriate 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 production planning, standard working procedures, scheduling and control techniques, resources, scheduling and control techniques, resources e.g. mechanical plant; concurrent engineering; constructability. 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 of space frame, shell, cable/suspension and surface structure.

Construction safety for operation on site.

Quality assurance in construction; maintenance; standards, etc..

Robotic construction.

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, seminars and site visits will facilitate the critical analysis of building production through case studies, laboratory and computer workshops. 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):

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 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.

Reading List:


Supplementary:

### Subject Code
BRE405

### Level
4

### Contact Hours
Lecture/Self study

### Student Effort
240

<table>
<thead>
<tr>
<th>Assessment Method</th>
<th>Coursework 100%</th>
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<tbody>
<tr>
<td>Credit Value</td>
<td>6</td>
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<tr>
<td>Pre-requisites</td>
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</tr>
<tr>
<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
</tbody>
</table>

### Subject Leader/Lecturer/Dept.
M.J. Hills (BRE)

### Subject Aim:

**This subject is intended to:**

1. Develop an ability to critically evaluate, synthesise and integrate knowledge gained from a variety of sources related to the construction development process.

2. 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. Propose solutions to complex technology and management problems associated with the proposal and development of a project.

### Brief Syllabus Content:

Students are required to select a site and formulate original proposals for its development or redevelopment. This will involve 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):

- A team of tutors is responsible for this subject with one designated as the co-ordinator. The various stages of the project are introduced through formal lectures with practitioners from industry invited to relate their experience of actual developments. The lectures are supplemented by small group tutorials with an assigned tutor.

- The pedagogical philosophy for this subject is student centred learning. For the most part, students’ are required to work using their own initiative to find out information 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 will be 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 will be carried out individually, whilst the
  second phase will be carried out in teams of five.
- Each team will be assigned a tutor who will assess the oral and written presentations for each phase in
  accordance with the prevailing grading scheme.

<table>
<thead>
<tr>
<th>Phase 1 Stage (a)</th>
<th>Selection of site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 2 Stage (c)</td>
<td>Procurement method</td>
</tr>
<tr>
<td>Phase 1 Stage (b)</td>
<td>Initial appraisal</td>
</tr>
<tr>
<td>Phase 2 Stage (d)</td>
<td>Design team briefing</td>
</tr>
<tr>
<td>Phase 2 Stage (e)</td>
<td>Planning approval</td>
</tr>
<tr>
<td>Phase 2 Stage (f)</td>
<td>Production and control</td>
</tr>
<tr>
<td>Phase 2 Stage (g)</td>
<td>Proposals for disposal</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weighting</th>
<th>Individual</th>
<th>Team</th>
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<tbody>
<tr>
<td>Phase 1 Project Proposal</td>
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<tr>
<td>Stage (a)</td>
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<tr>
<td>Stage (b)</td>
<td>30%</td>
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<tr>
<td>Phase 2 Project Development</td>
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<td></td>
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<tr>
<td>Stage (c), (d), (e), (f), (g)</td>
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<td>25%</td>
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<tr>
<td>Total Weighting</td>
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<td>25%</td>
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Reading List:

Recommended:


Subject Code: BRE406  
Level: 4  
Contact Hours: Guided Study & PW:168  
Student Effort Hours: 240  
Assessment Method: Coursework 100%  
Credit Value: 6  
Pre-requisites: All level 3 required subjects  
Co-requisites: Nil  
Exclusions: BRE491  
Subject Leader/Lecturer/Dept.: C.M. Hui (BRE)

**Subject Aim:**

This subject is intended to:

1. Encourage the student to take a critical and analytical view of an issue relevant to the construction and real estate industry and of particular concern to the Hong Kong and its neighbouring environments.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Demonstrate in the competent development and knowledge of a specific area of in-depth study.
2. Carry out and report on a small research project.

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

Academic leadership for the Dissertation is provided by the Dissertation Co-ordinator assisted by the supervisors who are BRE academic staff with research experience.

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.

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.

**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.

**Reading List:**

Recommended:


*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)*
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<th>Subject Code</th>
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<td>Level</td>
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<td>Contact Hours</td>
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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>Exclusions</td>
<td>Nil</td>
</tr>
<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>K.D. Wong (BRE)</td>
</tr>
</tbody>
</table>

### CIVIL ENGINEERING PRACTICAL CONTRACT PROCEDURE

#### Subject Aim:

*This subject is intended to:*

1. Develop an understanding of the technological and economic differences between the civil engineering and building industries, particularly from an infrastructural perspective.

#### Learning Outcomes:

*Students will demonstrate their ability to:*

1. Analyse the extent to which the contractual arrangements of civil engineering works differ from those of building work.

2. Critically compare the principle differences in contractual procedures between the civil engineering and building industries.

#### Brief Syllabus Content:

Technological aspects of large scale heavy construction projects such as roads, railways, tunnels, bridges, wharfs and land reclamation, marine structures and cofferdams; economics of civil engineering works.

The need for an infrastructural plan; the relationship between large scale heavy construction projects and the infrastructural plan; economics of infrastructural development and the impact on the economy.

Contractual arrangement for local and international civil engineering works; contracts and contract documents; nature and form of contracts; main characteristics of civil engineering contracts; types of contract encountered; form of purpose of contract documents.

Contract management and control of civil engineering works; cost control, variations, valuations and final account.

General arrangement and contents of civil engineering bills of quantities; method related charges and underlying philosophy; introduction to civil engineering 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):*

Contract documentation and administration will form the main thrust of the course, to be underpinned on a basic but comprehensive understanding of civil engineering technologies and economics. Lectures on the various technologies 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 civil engineering. Case studies will be utilised and professional practitioners invited to demonstrate different contract strategies in different projects, particularly those found in the Pacific region.

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

Examination and coursework will each constitute 50% of the overall mark for the subject. The coursework mark will be based on the assignments, seminar presentations and discussions. At least two assignments with equal contribution will be set.

The coursework of this subject will be evaluated on, i) a basic understanding of civil engineering practices, economics of infrastructural development, and its impact on the economy. ii) a working knowledge of the contract documentation and administration of typical civil engineering works. iii) a critical appraisal of alternative contract strategies, procedures and administration in local and international civil engineering projects.

**Reading List:**

**Recommended:**


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*
<table>
<thead>
<tr>
<th>Subject Code</th>
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<td>Level</td>
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<td>Student Effort</td>
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<td>Assessment Method</td>
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<td>Pre-requisites</td>
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<td>Co-requisites</td>
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<td>Exclusions</td>
<td>Nil</td>
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<tr>
<td>Subject Leader/</td>
<td>Y.H. Chiang (BRE)</td>
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<tr>
<td>Lecturer/Dept.</td>
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</table>

**Subject Aim:**

*This subject is intended to:*

1. Introduce basic concepts of strategic management.
2. Introduce project management techniques.
3. Enable students to integrate and apply various organisation and management theories in practical construction project management context.
4. Enable students to identify the sources and understand the nature of complexity of development and construction projects.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Identify key issues of a complex project management situation by synthesizing organisation and management theories in finance, production, marketing and human resources.
2. Understand the interaction between the external and internal environments of projects, and of the significance of strategic management to achieve realistic objectives that are acceptable to all stakeholders and committed by team players.
3. Formulate and implement strategies and policies that capitalize on the competitive advantages of the business enterprise and the project team.

**Brief Syllabus Content:**

Industry analysis nature of competition. Survey of environment and positioning of the firm and the project. Evaluation of risks and opportunities. Formulation and implementation of strategies at corporate and project levels.

Structuring of organizations. Power and influence in project teams. Leadership. Project management for property development.

International procurement and contract strategies. International finance, property investment and project finance.

*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 analytical tools and main issues of strategic project management will be introduced through formal lectures. Lectures will be supplemented by small group tutorials whereby the issues raised will be further discussed and elaborated.

This course will emphasize on the students’ synthesis ability. Students are required to integrate various management disciplines, and bring together pieces of hard data and soft information together to form a whole picture. The aim is to find out what needs to be done to get a quality project completed on time, within budget, and to the satisfaction of the clients, users and other stakeholders.

Accordingly, seminar projects and case studies will be set, requiring the analysis of a given situation. Students will then recommend an overall direction a complex project should take, after considering the internal and external environments of the project.

### 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 one assignment and participation in seminar discussion.

They will be assessed on how best they have made use of their background reading.

### Reading List:

**Recommended:**


**Supplementary:**


DISPUTE RESOLUTION

Subject Aim:

This subject is intended to:

1. Provide an understanding of the aspects of law and procedures relating to the resolution of dispute in the construction industry.
2. Develop students’ ability to appropriately apply theoretical aspects of dispute resolution to practical situations.

Learning Outcomes:

Students will demonstrate their ability to:

1. Evaluate the evolution of dispute resolution in an international context.
2. Identify the relevant laws, regulations and procedures that may be applied 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.

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.

Reading List:

Recommended:

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
Langan, P. St. J. (1983), Civil Procedures, Sweet & Maxwell

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.:** K.D. Wong (BRE)

### 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.
2. Understand and demonstrate knowledge of the applications of computer systems in various procurement stages of a construction project.
3. Be able to appraise commercially available and tailor-made computer packages in construction production and management.

### Brief Syllabus Content:

The construction process.

Identifying the benefits of computer based systems.

The appraisal of CAD systems in design communication and drawing production.

The use of commercial packages in cost planning and preliminary estimating.

The use of computers in the preparation of tender, measurement and production documents.

Computerized estimating, bidding and tender appraisal.

The application of computers in post contract cost control, valuation, interim payment and final account.

Computerized construction management in project planning, information control, material control, progress control and quality assurance.

### 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 gearing towards 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/)
<table>
<thead>
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<th>Subject Code</th>
<th>BRE418</th>
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<tr>
<td>Level</td>
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<tr>
<td>Contact Hours</td>
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<td>Assessment Method</td>
<td>Coursework 50% Examination 50%</td>
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<td>Credit Value</td>
<td>3</td>
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<td>Pre-requisites</td>
<td>BRE316</td>
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<td>Co-requisites</td>
<td>Nil</td>
</tr>
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<td>Exclusions</td>
<td>Nil</td>
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<tr>
<td>Subject Leader/Lecturer/Dept.</td>
<td>B.S. Tang (BRE)</td>
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</table>

**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. Identify and describe 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.

**Brief Syllabus Content:**

*Real Estate Development Process:*
Models of Development Process; Strengths and Weaknesses of Development Models; Factors Influencing Real Estate Development.

*Public Sector Regulations and Development Potential:*
Development Control and Real Estate Development; Concepts of Project Feasibility; Approaches in Development Control Decision Analysis.

*Current Issues in Real Estate Development:*
Property Finance and Property Cycles; Globalization of Real Estate; Land Development in China; Urban Redevelopment.

*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):

Lectures - The lectures provide an explanation 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 to guide students to discuss the relevance of the past literature and/or work on particular problem-based cases in local real estate development. Students are required to present 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) and (5).

Final examination comprises essay type questions and is intended to assess Learning outcomes (2) – (5).

### Selected Reading List:

<table>
<thead>
<tr>
<th>Subject Code</th>
<th>BRE419</th>
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<tr>
<td>Level</td>
<td>4</td>
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<td>Contact Hours</td>
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<td>Student Effort Hours</td>
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<tr>
<td>Assessment Method</td>
<td>Coursework 50% Examination 50%</td>
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<tr>
<td>Credit Value</td>
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<td>BRE332 &amp; BRE333</td>
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<td>Exclusions</td>
<td>Nil</td>
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<tr>
<td>Subject Leader/ Lecturer/Dept.</td>
<td>S.W. Fong (BRE)</td>
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</tbody>
</table>

**VALUE MANAGEMENT**

**Subject Aim:**

This subject is intended to:

1. Focus on the theories as well as applications of value management in different phases of a development.
2. Develop an appreciation for what can be accomplished using the techniques of VM and applied creativity.
3. Recognise the management as well as the technical issues which can be solved or addressed using the techniques of VM and critical thinking.

**Learning Outcomes:**

Students will demonstrate their ability to:-

1. Understand the concepts of Value Management with emphasis on Function Analysis and Life-Cycle Costing.
2. Understand the use of VM in different phases of a project life-cycle.
3. Apply VM to construction company business situations and technical situations.
4. Understand and apply VM problem solving techniques as a management tool.
5. Develop and apply creativity skills practically.

**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, creativity, evaluation, development, proposal); function analysis, group dynamics, creativity, problem-solving skills and life-cycle costing

Comparison of value management and traditional cost management techniques.

Case studies of the practice of value management in Hong Kong and overseas.

*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 class will be conducted through a combination of lectures, student discussions, group and individual exercises, and active student participation. 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 outside of formal class meetings to pursue and develop VM teamwork.

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

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Percentage</th>
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<tbody>
<tr>
<td>Coursework</td>
<td>50%</td>
</tr>
<tr>
<td>- multiple choice test (30%)</td>
<td></td>
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<tr>
<td>- team project (70%)</td>
<td></td>
</tr>
<tr>
<td>Examination</td>
<td>50%</td>
</tr>
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</table>

Reading List:

Recommended:


Institution of Civil Engineers (1996), *Creating Value in Engineering*, Thomas Telford.


Standards:

AS/NZS 4183: 1994 *Value Management*

BS EN 12973: 2000 *Value Management*

Pd 6663: 2000 *Guidelines to BS EN 12973 Value Management. Practical guidance to its use and intent*

ASTM E-1699: 2000 *Performing value analysis (VA) of buildings and building systems*

Supplementary:


BUILDING SERVICES PRACTICE AND CONTRACT PROCEDURE

Subject Code: BRE420
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort Hours: 120

Assessment Method:
Coursework 50%
Examination 50%

Credit Value: 3
Pre-requisites: BRE392 or BRE311 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 building services in building projects.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Understand the practices of procurement and contractual arrangements of building services projects.
2. Produce measurement and documentation for building services works.
3. Appraise and apply the principle and practices of contractual procedures and administration in building services projects.

Brief Syllabus Content:

1. Technological aspects of building services works such as electrical, fire services, HVAC and other automation systems.
2. Cost appraisal and cost planning for building services projects.
3. Procurement systems and contractual arrangements for building services projects.
4. Documentation, measurement and valuation of building services works.
5. Contract administration and procedure in building services 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 basic but comprehensive of building services technologies and economics. Lectures on the various technologies 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 building services. Case studies will be utilised and professional practitioners will be invited to demonstrate different contract strategies in different projects.

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 mark for the subject respectively. The coursework mark will be based on the assignments, seminar presentations and discussions. At least two assignment, 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 building services practices, economics of building services development, and its impact on the economy; (ii) a working knowledge of the contract documentation and administration of typical building services works; (iii) a critical appraisal of alternative contract strategies, procedures and administration in building services projects.

**Reading List:**

**Recommended:**


*Hong Kong Standard Method of Measurement for Building Services.*


RICS (1976) *An Introduction to Cost Planning*, London: RICS


**Supplementary:**


Mulvihill, E.N. (1979) Correspondence on measurement of engineering services. *The Quantity Surveyor* 35 (9), 423.


### Subject Code: BRE423
#### Level: 4
#### Contact Hours: Sem:14 PW:140
#### Student Effort: Hours 240

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<th>Assessment Method</th>
<th>Coursework 100%</th>
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<tr>
<td>Credit Value</td>
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<tr>
<td>Pre-requisites</td>
<td>BRE342</td>
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<td>Co-requisites</td>
<td>Nil</td>
</tr>
<tr>
<td>Exclusions</td>
<td>Nil</td>
</tr>
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#### Subject Leader/Lecturer/Dept.
- H.K. Chung (BRE)

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**PROFESSIONAL STUDIES III**

### Subject Aim:

This subject is intended to:

1. Encourage critical investigation, analysis and synthesis in solving problems in the 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 the discipline specific and interdisciplinary nature of the development process and develops team working. More emphases will be put on course specific problem tasks in order to cater for the needs of individual courses.

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**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Understand the major issues involved in the development process.
2. Have an awareness of the value of teamwork as an approach to tackle a project and problem-solving.
3. Apply knowledge and skills acquired in various subject areas and to solve problems in the professional context.

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**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 individual professional discipline. The projects require students to develop solutions creatively and to present recommendations systematically.

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**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 and consists of 28-week activities throughout 2 semesters.

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**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.

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**Reading List:**

Construction Journals, Databases, Statistics and Module Texts

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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: 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.: M. Yam (BRE)

Subject Aim:

This subject is intended to:

1. Provide students with knowledge of the behaviours of soils under pressure, pore water pressure and the effects of water in soil 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. Verify the importance of the principles of soil mechanics in underpinning the stability of the superimposed building structures, both simple and complex.
2. Apply the understanding of soil properties, mechanics principles and theories on the behaviours of soils under different kinds of pressures and the effects of water.
3. Evaluate the importance of safety and geotechnical considerations in designing/undertaking site formation and earth-retaining works.
4. Show an understanding of the basics of soil mechanics and its application to analyze soil retaining structures.
5. Illustrate an understanding of modern soil improvement techniques and retaining slopes, soil and excavation techniques.
6. Appraise foundation design concepts in the choice of appropriate foundation in relation to soil types and building forms/uses.

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 stabilisation, 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.

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):

Teaching is based on lectures and to be supported by experimental and practical work conducted in laboratory and industrial training centre. In the tutorials students are to demonstrate then ability to solve problems/issues related to geotechnics and foundation in their assignments/exercises and site visits are to be arranged to witness theories put to work in practice.

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

Examination and coursework will constitute the 70% and 30% of the overall work of the subject respectively. The coursework mark will be based on the assignments, seminar presentation and discussions. In the examination, students are to demonstrate both structural concepts and knowledge in an applied situations.

Reading List:

Recommended:

Supplementary:
Tomlinson M.J. (1994) Pile design and construction practice, E & FN Spon
APPLIED PROPERTY INVESTMENT

**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.

**Learning Outcomes:**

Students will demonstrate their ability to:

1. Have an awareness of the investment environment for real estate in Hong Kong, PRC and Overseas.
2. Appreciate the scope of real estate investment in Hong Kong.
3. Apply their knowledge to solve practical problems in real estate investment business.

**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 and equity syndication in the property market; tax implications of property investment; property investment in the People’s Republic of China and overseas.

The investment decision: sources and manipulation of information; analysis of real property investments; comparative investment analysis; returns on investment; portfolio management and performance measurement; risk and uncertainty. Investment psychology.
Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

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.

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:**


Brown R. Gerald (2000), Real Estate Investment: a capital market approach


Hersh Sefrin (2000), Beyond Greed and Fear: understanding behavioural finance and the psychology of investing

**Supplementary:**

Graham and Dodd (1962), Security Analysis: principles and technique, 4th edition

Graham (1973), The Intelligent Investor: a book of practical counsel
Subject Code: BRE428
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
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept: P.C. Chan (BRE)

CONSTRUCTION ENGINEERING MANAGEMENT

Subject Aim:

This subject is intended to:

1. Develop the students' ability to apply various operational research techniques and decision making theories in the management of construction projects.
2. Introduce students to various procurement systems for construction.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Be aware of the different kinds of operational research techniques.
2. Enable to choose an appropriate operational research for a particular managerial problem.
3. Understand the different kinds of decision theories.
4. Aware the different types of procurement systems in the construction industry.
5. Apply the concepts and tools in selecting appropriate procurement system.

Brief Syllabus Content:

Operational Research Techniques
Application of linear programming in construction project management and process control.
Fundamentals of decision theory. Decision trees, utility theory and sensitivity analysis.
Inventory control, queuing theories and transportation theories.
Monte Carlo simulation and applications.

Construction Procurement
The nature of the building process; models of the process.
Categorisation of procurement systems.
Principles of fast-tracking.
Alternative procurement systems such as project management, construction management, management contracting, design and build, novation contract, build-operate-transfer (BOT).
Choice of appropriate procurement system, allocation of risks and liabilities of the major parties to the arrangement.

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, interviewing, problem solving, reflection and textual & graphical communication as individuals and as part of a group. Some assignments will involve the use of computer software packages for 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 (P)/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


**Supplementary:**

Association of Researchers in Construction Management, Proceedings

*Construction Papers*, CIOB

CIB W65 Proceedings

**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
### REAL ESTATE MARKETING AND AGENCY

#### Subject Aim:

This subject is intended to:

1. Equip students with an understanding of marketing practices in the real estate industry.
2. Examine the specific applications of marketing theories and techniques, estate agency practices as well as interpersonal communication and negotiation skills in a real estate marketing context.

#### Learning Outcomes:

Students will demonstrate their ability to:-

1. Understand the applications of marketing theories in the real estate industry.
2. Formulate marketing strategies for both primary and secondary marketing properties.
3. Evaluate the effectiveness of marketing strategies adopted by real estate marketers.
4. Appreciate and criticize agency practices and malpractices.
5. Aware 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.

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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)
### 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.

(i) will be set to ask the student to formulate marketing plans on conventional as well as innovative real estate products.

(ii) 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: BRE430
Level: 4
Contact Hours: Lect: 21 Sem/Tut: 21
Student Effort Hours: 120

**BIDDING, FORECASTING & COST CONTROL**

**Subject Aim:**

*This subject is intended to:*

1. Help students acquire the knowledge and skills to manage cost within budget and compete for work in the construction industry.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Comprehend the relative importance and interaction of factors that affect bidding and forecasting levels.
2. Develop an appreciation for the ever changing business environment and its effect on competition levels.
3. Select and employ appropriate techniques in price forecasting and for managing cost within budget.
4. Recognise the usefulness and limitations of bid and cost modeling and risk management techniques.
5. Integrate risk management techniques with bidding and forecasting.
6. Analyse bidding performance and forecasting accuracy.
7. Draw conclusions and make recommendations on bidding performance, forecasting accuracy, and cost control.

**Brief Syllabus Content:**

**Bidding**

Relationship between construction contract bidding, competitive fee tendering and land auctions.
Strategic management and competitive advantage: diversification; international contracting.
The competitive environment: bidding systems; bidding process; decision to tender; pricing policy; bidding strategy; risk in bidding.
Market conditions: level of competition; competitor analysis.
Monitoring bidding performance: competitiveness and consistency in bidding; market share and competitiveness.
Strategies for improving competitive advantage; subcontractor selection strategies.
Client objectives: single/two stage bidding; bidder prequalification, bid assessment, and award of contract.
Strategies for improving bidder prequalification.

**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; ability of forecastor; technique used; cost data; market conditions.
Feedback in forecasting: relative importance of factors in forecasting.

**Cost Control**

Precontract cost planning and control; cost and financial control for construction firms; cash flow; monthly cost control procedures; effect of delayed payments.

**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 introduce the key issues followed by problem-solving sessions in the seminar. The problem-solving sessions will, in the main, consist of the empirical analysis of data taken from construction projects, 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 50% and 50% of the overall mark for the subject respectively. The coursework mark will be based on assignments, seminar presentations and discussions.

The coursework mark will comprise one assignment.

Reading List:

Recommended:


Supplementary:


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: BUSS298
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: C.M. Hui (BRE)

Subject Aim:

This subject is intended to:

1. Understand housing theories and their applications; examine housing policies, programmes, instruments and organizational arrangements in different countries.
2. Consider the implications of housing development in the social-economical context.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Apply housing theories and models.
2. Examine and evaluate housing policies, programmes, instruments and organisational arrangements in countries at different levels of economic development.
3. Consider the implications of housing development in the socio-economical context.

Brief Syllabus Content:

Housing Theories
Economic models and techniques underlying housing market analysis and their limitations.

Housing Policies
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.

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.
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 Code: BRE432  
Level: 4  
Contact Hours: Lect:21 TU/SEM:21  
Student Effort Hours: 120  
Assessment Method: Coursework 30% Examination 70%  
Credit Value: 3  
Pre-requisites: BRE341 or equivalent  
Co-requisites: Nil  
Exclusions: Nil  
Subject Leader/Lecturer/Dept.: C.H. Lau (BRE)

Subject Aim:

This subject is intended to:
1. Provide the student with the skills to carry out the efficient maintenance and management of property. Property management is particularly important in Hong Kong.
2. Understand the role of management in corporate, investment and residential property.
3. Understand the role of property management in organizations.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Understand the concepts, tools and techniques of property management operations.
2. Understand the interaction between property, different types of users and owners, and the economic and social environment.
3. Apply management techniques to ensure the efficient use and maintenance of buildings.

Brief Syllabus Content:

The market for property management services, including the types of property and the types of organisations using property managers. The role of property and facilities management in organisations.

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

Teaching will utilize problem based learning approach. Lectures to provide basic concepts to direct the students own reading programme. 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.

**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
MANAGEMENT FOR PROJECT DEVELOPMENT PROCESS IN MAINLAND CHINA

Subject Aim:

This subject is intended to:

1. Use the knowledge obtained from the subjects concerning management of construction projects during the students' earlier levels of study.
2. Extend their knowledge of project management process in the Mainland China construction and real estate industry.

Learning Outcomes:

Students will demonstrate their ability to:-

1. Evaluate the historical development and business environment of project management in Mainland China.
2. Assess the nature, organization, function and procedures of management for developing construction project in Mainland China.
3. Participate in and organize team work.
4. Evaluate the problems and risks, and identify management solutions in the practice of project development process in Mainland China.

Brief Syllabus Content:

Introduction to the China Mainland construction industry
Construction and real estate market in the China Mainland
Project development procedures
Project resources: financing, materials, labor, plant, information
Construction procurement systems and procedures
Project supervision and project management: quality management, cost management, project progress control
Contract management
Practice of construction professionals
Joint ventures in China Mainland construction industry
Risk management for construction and real estate 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 class size will be limited to 30 members.

The methods of teaching comprise: (1) formal lectures for explaining and discussing important concepts and theories in the subject contents; (2) tutorials for guiding students to discuss and work on problem-based cases; (3) seminar for students to present and discuss the key findings in their assignment papers; (4) problem-based workshops for students to work with Mainland students on specific topic; (5) professional visit for students to exchange with professionals in China Mainland. Lectures will also be given by guest speakers.

Study guide/tutorial topics/backgrounds will be distributed to students at the beginning of the course. Tutorial questions and problem-based cases will be related to the subject.

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

The implementation of this subject will take a continuous assessment approach. The overall assessment comprises:

- 1 open-book test, 30%;
- 1 individual assignment paper, 30%;
- 1 student-led seminar, 20%;
- 1 responsive commentary to peer’s work, 10%;
- participation of tutorials, workshops and professional visit, 10%.

The open-book test is to demonstrate the general knowledge and understanding of management for project development process in China Mainland. The individual assignment paper requires the students to apply principles, theories and concepts learnt to analyze problems, to identify and develop proposals for solving the problems. The student-led seminar will provide opportunity for each student to practice the managing role in a team activity and demonstrate the organizing ability. The seminar will be based on a tutorial work designed with focusing on various specific problems relating to individual learning units, and individual 'managers' are requested to manage the whole process including the study of the case, investigation of problems and recommendations for solving problems and discussion over the seminar. The responsive commentary to peer’s work is to develop students’ ability of participating and assessing other’s work. The participation of workshops and professional visit that are taken in China Mainland is expected to develop students’ ability in participating discussion, and the ability and spirits of working with Mainland students, their knowledge of construction practice in the Mainland.

Reading List:

Recommended:

Supplementary:
### MAINTENANCE TECHNOLOGY AND THE BUILT ENVIRONMENT

**Subject Aim:**

*This subject is intended to:*

1. Enable students to apply maintenance technology to ensure the efficient maintenance of buildings.
2. Encourage students to consider principles of conservation and environmental issues on the maintenance of the built environment.

**Learning Outcomes:**

*Students will demonstrate their ability to:*

1. Identify and diagnose common building and material defects and test data.
2. Understand environmental issues and the role of building professionals in them.
3. Apply maintenance technology principles in design and evaluation of repair methods and conservation.

**Brief Syllabus Content:**

- Building survey and diagnostic techniques: life expectancy.
- Site/labatory destructive or non-destructive testing of building materials and components including forensic engineering techniques such as damp detection, thermography, ultra-sound, condensation analysis etc.
- Building envelope study: facade deterioration, penetration problem, defects related to tall buildings.
- Biological, chemical and mechanical deterioration of buildings, detection and eradication.
- Typical deteriorating factors for reinforced concrete structure in Hong Kong.
- Environment issues in building maintenance, detection of hazardous material, health aspects of asbestos removal, use of lead based products, depletion of hard wood reserves, the surveyors role in these issues.
- Specifications for repair/refurbishment work.
- Restoration, conservation, problems of craftsmanship and material selection.

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<td>Contact Hours</td>
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<td>Co-requisites</td>
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<td>(BRE)</td>
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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)
### Learning and Teaching Approach *(tasks and activities designed to achieve learning outcomes):*

The main content will be taught by lectures. This will be supplemented by site and laboratory works where appropriate. Site visits and industrial centre sessions will be conducted to identify building defects and evaluate repair methodology. Laboratory works are essential in introducing site and laboratory testing encountered in maintenance and technical auditing.

### 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.

### Reading List:


### Supplementary:

Subject Code: BRE435
Level: 4
Contact Hours: Lect:21 Sem/Tut:21
Student Effort: Hours 120

Assessment Method: Coursework 100%
Credit Value: 3
Pre-requisites: BRE391
Co-requisites: Nil
Exclusions: Nil
Subject Leader/Lecturer/Dept.: K.K. Lo (BRE)

**DESIGN, ADAPTATION AND CONVERSION**

**Subject Aim:**

*This subject is intended to:*

1. Equip students with the skills necessary to undertake the conversion of existing buildings.

**Learning Outcomes:**

*Students will demonstrate their ability to:-*

1. Appreciate the importance of conversion, improvement and adaptation of existing building as a means of extending the useful life and economic return of Hong Kong buildings.

2. Understand the concepts of economic and physical obsolescence for buildings.

3. Apply the local statutory requirements affecting adaptation and conversion of existing buildings.

4. Identify problems and constraints in the course of design for conversion and adaptation work.

5. Plan the project management and contract administration for conversion and adaptation.

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

The subject involves both theoretical and practical approaches in local context, 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 and will therefore use case studies. The subject will be assessed by 3 pieces of coursework. One will be individually assessed (worth 40%) and two pieces will be group work (30% each).

**Reading List:**

**Recommended:**


**Supplementary:**

Highfield, David (1987), *Rehabilitation and Re-use of Old Buildings*, Spon

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<td>Examination 50%</td>
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<td>K.C. Wong (BRE)</td>
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<tr>
<td>Lecturer/Dept.</td>
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### APPLIED PROPERTY VALUATION

**Subject Aim:**

*This subject is intended to:*

1. Solve complex valuation problems.
2. Consider practical valuation problems taking into account of the effects of legislation.
3. Examination valuation standards of selected overseas countries.

### Learning Outcomes:

*Students will demonstrate their ability to:-*

1. Identify 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. Identify the sources of international valuation standards and their importance.

### 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.

*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)*:

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:**


HKIS, (1999) *Hong Kong Guidance Notes on the Valuation of Assets*


**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)
### 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. understand management concepts
2. understand the role of facility manager
3. apply concepts and tools to manage and assess real estate facility performance
4. apply concepts and tools to manage and assess real estate investment portfolio

**Brief Syllabus Content:**

Basic concepts of facility management – an integrated approach
The changing workplace – space utilization and office 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
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%].

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<td>Level</td>
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<td>Contact Hours</td>
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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>Co-requisites</td>
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<td>Exclusions</td>
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<td>C.Y. Yiu (BRE)</td>
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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)
Reading List:

Recommended:


Supplementary:


Journals for references:

*Facilities*
*Facility Management Journal*
*IFMA News*
*Property Management*
Subject Code: BRE491  
Level: 4  
Contact Hours: Guided Study & PW:168  
Student Effort Hours: 240  
Assessment Method: Coursework 100%  
Credit Value: 6  
Pre-requisites: All level 3 required subjects  
Co-requisites: Nil  
Exclusions: BRE406  
Subject Leader/Lecturer/Dept.: C.M. Hui (BRE)

Subject Aim:

This subject is intended to:

1. Encourage the student to take a critical and analytical view of an issue relevant to the construction and real estate industry and of particular concern to the Hong Kong and its neighbouring environments.

Learning Outcomes:

Students will demonstrate their ability to:

1. Demonstrate the competent development and knowledge of a specific area of in-depth of study.
2. Carry out and report on a small research project.

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

Academic leadership for the Dissertation is provided by the Dissertation Co-ordinator assisted by the supervisors who are BRE academic staff with research experience.

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.

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 & contract management, engineering economics, construction quality in engineering works, application of information technology in the building industry, engineering materials, etc.

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.

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 person 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.

Reading List:

Recommended:

Adamson A., A Student’s Guide for Projects, Field Studies & Research, Thomesam Publications in Association

**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)
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. Understand that attention to detail in respect of fixtures, fittings and finishes on the performance and maintainability of systems.
2. Understand the requirements for proper co-ordination of the installation 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:


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**ENVIRONMENTAL MANAGEMENT AND IMPACT ASSESSMENT**

**Subject Aim:**

*This subject intend to:*

1. Understand, and analyses the process affecting the environment through the use of suitable environmental assessment techniques;
2. Integrate knowledge from a broad range of subjects in environmental engineering and management into one framework for problem analysis and solution seeking.
3. Increase the environmental and social awareness of the students.

**Syllabus Content:**

**Introduction:**
Environmental objectives; Sustainable development; Social and management responsibility; environmental legislations and economic incentives in environmental management; Environmental protection administrative system in Hong Kong.

**Environmental Assessment and Its Related Impact Studies:**
Historical review of the development of environmental impact studies; Introduction to impact prediction and basic assessment techniques for air, noise, water, waste and land use; Steps in the preparation of an Environmental Impact Statement (EIS). Application of environmental assessment in city and land use planning; Case studies on Environmental Impact Assessment (EIA) in major engineering, industrial and civil development projects.

**Environmental Management and Environmental Management System:**
Introduction to environmental planning and management, and environmental management system (EMS); EMS standards (ISO 14000); Preparation and design of EMS; Implementation processes; Environmental performance and management review; Case studies on environmental planning and management.

**Environmental Auditing Processes:**
Environmental auditing requirement and process; Types of environmental audit; Pre-audit preparation; On-site audit activities; Audit report and follow-up. Case study and analysis of environmental audits.

**Learning and Teaching Approach:**
The concept of environmental management and impact assessment will be established through lectures, tutorials, and seminars on local and international case studies. Students will be required to form groups to work through a short project for the illustration of environmental management and for the application of environmental impact assessment techniques. Tutorials will be structured on different sessions with clearly defined topics and will require adequate preparation and contribution from students. Students will also learn through active participation in the preparation of their project works and case studies in seminars and discussion among fellow students.
Assessment:

Overall assessment will be based on an examination (60%) and continuous assessment (40%). Of the continuous assessment, project work will carry 20% of the total mark while seminar presentation and course work will be awarded the other 20%.

Reading List:

Recommended:


